

Growing Baldock

Environmental Statement Volume 2: Figures & Appendices

Chapter 11: Ecology

Appendix 11.2 Phase 2 Ecological Assessment



BALDOCK, HERTFORDSHIRE

PHASE 2: FURTHER ECOLOGICAL ASSESSMENT

BMD.21.0045.RPE-P2.804.A.Eco Assessment
DATE: AUGUST 2025



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PHASE 2: FURTHER ECOLOGICAL ASSESSMENT Baldock, Hertfordshire

August 2025

BMD.21.0045.RPE-P2.804.A.Eco Assessment

DOCUMENT HISTORY

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Declaration of compliance with professional code of ethics or conduct

The information which we have prepared and provided is true and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bonafide opinions.

All reasonable efforts have been made to comply with current legislation and best practice, including BS 42020:2013, the Environment Act 2021 (Schedule 7A: Biodiversity Gain), the National Planning Policy Framework (2025), CIEEM EclA Guidelines (2018, updated 2022), and relevant Natural England guidance.

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EXECUTIVE SUMMARY

Client	Urban&Civic plc
Consultant	Bradley Murphy Design Ltd.

SITE

Location	Baldock, Hertfordshire
National Grid Reference	Approx. centre: TF03160859
Over-view	The Site is approximately 219 ha in total however is largely dissected by a railway running east west through the middle of the Site effectively creating a northern and southern portion of the Site. Two small sections of the railway, however, fall within the northern section of the Site, partially connecting it to the southern area at two locations. The northern area comprises approximately 143 ha. The southern area comprises approximately 76 ha. The northern area of the Site is composed of land parcels to the north and south of Bygrave Road/Ashwell Road in Baldock, Hertfordshire, centred at Ordnance Survey National Grid Reference TL 25369 34942. The northern section is bound to the south by the railway, with two small sections of the railway line falling within the Site boundary. It comprises a combination of arable fields and grazed pasture, with a mixture of residential and farm buildings located along Bygrave Road. North and east of the Site is dominated by farmland, with the town of Baldock located to the south-west. To the west, beyond North Road, is Ivel Springs LNR, Blackhorse Farm Meadow LWS and Ivel Springs, Norton Road LWS. The southern section of the Site is located to the east of the town of Baldock in Hertfordshire and is centred at Ordnance Survey National Grid Reference TL 25643 33923. The Site comprises arable fields with occasional boundary hedgerows, with a mixture of residential and farm buildings. It is largely bound by a railway line to the north, the A505 to the south and east with the residential areas of Clothall Common and Baldock to the west.
Landscape context.....	The Site is situated on the eastern extent of the town of Baldock. As such, the Site sits within a transitional landscape, with an agricultural field matrix to the north, and an urbanised area characterised by residential developments with occasional industrial use to the south and southwest.

DEVELOPMENT & PLANNING BACKGROUND

Proposed works	Outline planning application with all matters reserved except for means of highway access into the development from the A505, North Road, Royston Road, Clothall Road and Wallington Road, for up to 3,200 homes, up to 16ha of employment, waste and leisure infrastructure, mixed use local centre, up to 1 secondary school, up to 2 x primary schools, up to 1 SEND school, health hub, green infrastructure (including parks, formal sports provision, play, habitat areas, informal open space and structural planting), internal street network, access junctions and railway crossing, public transport infrastructure, pedestrian/cycle network (including PRoW diversions, active travel routes, mobility hubs and crossing of the railway), utilities and drainage infrastructure (including diversions of existing and provision of new infrastructure, pumping stations, sustainable drainage, primary substations, rising main/strategic sewer and renewable energy infrastructure), ground remodelling/earthworks and any necessary demolitions. This Phase 2: Further Ecological Assessment has been produced as part of the baseline stage of the SMP (Strategic Masterplan) to inform the emerging masterplan.
Planning stage	Outline Planning Application

ECOLOGICAL BACKGROUND

General.....	An ecological appraisal was undertaken at the site in 2015 (Ecus, 2016). WYG carried out a suite of breeding bird surveys in 2017 (WYG, 2017a). Subsequently, an ES was prepared and an outline planning permission submitted in January 2018. However, the application was subsequently withdrawn. In 2019 the ecological appraisal was updated along with a series of species-specific assessments including corn bunting and reptile reports which were produced between 2019-2020. No other ecological assessments are known to have been undertaken in the study area.
Most recent baseline.....	An ecological assessment of the Site was undertaken by BMD during March-July 2022 that refined the scope of Phase 2 surveys required to inform the outline planning application. A verification was undertaken in July 2023 of habitats within the Site. Full results of the survey are found here: BMD.21.0045.RPE-TN.807.A

SURVEY

Objectives.....	1. To provide further ecological baseline, including nature conservation value, of the Site with a focus on protected and notable species; 2. To guide the initial stages of master planning and indicative mitigation required to ensure net biodiversity gain is achieved and favourable conservation status of species utilising the Site as a result of the proposed development; and 3. To provide specialist advice and make appropriate recommendations to ensure compliance with wildlife law and recognised best practice.
Approach	Specific surveys, following current best practice, were undertaken for the following species/species groups: • Bats • Badger

	• Breeding birds • Winter birds • Reptiles.
Date.....	A survey to assess the botanical interest was also completed. May 2022– July 2022.
Results	<u>Bats</u> - No bat roosts have been confirmed on Site to date, two trees and 14 buildings have been subject to nocturnal surveys to date (November 2023). Full results are presented within Phase 2: Further Ecological Assessment: Bats (Ref: BMD.21.0045.RPE-P2.808). Bats have been recorded foraging and commuting at the Site with key habitat areas being the peripheries of fields, dark roadways (Bygrave Road), the railway corridor, boundary hedgerows and treelines (in particular northeast adjacent Ivel Springs). Bat species recorded at the Site include common pipistrelle, <i>Plecotus</i> sp., serotine, noctule, <i>Myotis</i> sp. and <i>Nyctalus</i> sp. <u>Breeding birds</u> – A total of 17 (15 recorded to hold territories) bird species were recorded at the Site during breeding bird surveys, including Red and Amber listed species. The Site is assessed to continue to support a breeding corn bunting population of county level importance (similar to the findings of the 2019/20 assessment). The diverse assemblage is largely associated with the scrub, farmland and rough grassland habitats. <u>Wintering Birds</u> - A total of 42 species were recorded during the wintering bird survey. Of these, four species were not recorded during the breeding bird survey: peregrine, raven, redwing and fieldfare. The wintering bird survey recorded two significant flocks of corn bunting (40 birds and 34 birds) along with an additional 39 birds. Summing these counts gives a figure of 113 corn bunting present within the Site during winter periods (assuming no double counting). It is considered the flock of c100 birds also recorded during the survey represents an amalgamation of the two large flocks noted, plus additional birds. On the basis of the findings of the walkover survey it is estimated that the Site has a role in supporting a wintering population of corn bunting in the region of 100-120 birds, comprising adult birds and young birds of the year. <u>Schedule 8 plant species</u> lizard orchid was recorded within the south-east grassland. <u>Reptile</u> – a 'low' population of common lizard and 'low' population of slow worm occur in select areas of the Site. <u>Botanical</u> - The keys areas of botanical interest are: the unmanaged grassland (although very variable); grassland scrub-mosaic in the south-east of the agricultural land and roadside verges associated with Bygrave Road LWS. A verification was undertaken in July 2023 of habitats within the Site. Full results of the survey are found here: BMD.21.0045.RPE-TN.807.A <u>Incidental sightings</u> - S41 species and Local BAP species: small blue and lizard orchid.
Evaluation/Conclusions.....	The Site supports a range of protected and notable species and as such, appropriate mitigation and compensation will be required to facilitate the Proposed Development.

RECOMMENDATIONS

Appropriate mitigation strategies will be required to ensure protected and notable species are protected from harm during the construction works and that the conservation status of all protected and notable species currently using the Site is maintained post development through habitat creation and enhancement.

Opportunities for enhancement include the use of appropriate native trees and shrubs in the planting schemes, provision of bat roosting features (range of boxes), hedgerow enhancements and replanting, enhancements of degraded woodland and calcareous grassland, management of scrub, creation of hibernacula and refugia and enhancement of grassland areas.

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1. INTRODUCTION

1.1 Background Information

- 1.1.1 Bradley Murphy Design Ltd. (BMD) was commissioned by Urban&Civic plc in March 2022 to undertake an Ecological Assessment of their site: Baldock, Hertfordshire —hereafter referred to as 'the Site'. The Site is approximately centred on national grid reference: TL 25319 34539. A plan depicting the Site's location is provided in the Appendix.
- 1.1.2 Species specific surveys which have been undertaken at the Site are detailed in section 2.
- 1.1.3 This report presents the approach, results and evaluation of assessments and surveys undertaken at the Site to provide the species-specific ecological baseline. The data will:
- Further guide the detailed master planning to ensure that favourable conservation status of the species/species groups assessed (where confirmed on Site) is at least maintained and, where appropriate, enhanced through the design and mitigation hierarchy (avoid, mitigate, compensate);
 - Further inform the detailed planning applications and level of mitigation required to ensure, as a result of the proposed development:
 - o Current European and domestic wildlife legislation is not breached.
 - o Favourable conservation status of protected and notable species at the Site.

1.2 Proposed Development

- 1.2.1 Outline planning application with all matters reserved except for means of highway access into the development from the A505, North Road, Royston Road, Clothall Road and Wallington Road, for up to 3,200 homes, up to 16ha of employment, waste and leisure infrastructure, mixed use local centre, up to 1 secondary school, up to 2 x primary schools, up to 1 SEND school, health hub, green infrastructure (including parks, formal sports provision, play, habitat areas, informal open space and structural planting), internal street network, access junctions and railway crossing, public transport infrastructure, pedestrian/cycle network (including PRow diversions, active travel routes, mobility hubs and crossing of the railway), utilities and drainage infrastructure (including diversions of existing and provision of new infrastructure, pumping stations, sustainable drainage, primary substations, rising main/strategic sewer and renewable energy infrastructure), ground remodelling/earthworks and any necessary demolitions.

1.3 Site Context

Historic Context

- 1.3.1 Readily available historic aerial imagery and maps indicate that the Site has largely remained in its current state of arable land with the surrounding landscape largely being used for agricultural purposes since at least the late 18th century. The surrounding landscape has also remained largely unchanged from its 19th century landscape character, except for localised urban expansion of inhabited areas surrounding the Site; most notably the town of Baldock and city of Letchworth to the southwest, the town of Stotfold to the northwest. The surrounding habitats have

also seen changes with the removal of woodland parcels for further agricultural land occurring throughout the 19th century.

Present Context

- 1.3.2 The Site is approximately 219 ha in total however is largely dissected by a railway running east west through the middle of the Site effectively creating a northern and southern portion of the Site. The northern area comprises approximately 143 ha. The southern area comprises approximately 76 ha.
- 1.3.3 The northern area of the Site is located within the north of Hertfordshire, approximately 7.6 km north of the borough of Stevenage, at the north-eastern extent of the market town of Baldock. The Site is dissected by the Cambridge Train Line which splits the Site into a northern and southern area. Two small sections of the railway line, however, fall within the northern section of the Site, partially connecting to the southern area of the Site.
- 1.3.4 The train line running through the centre of the Site borders the northern area of the Site to the south, with two small sections of the railway line falling within the northern section of the Site; North Road to the west and chiefly agricultural land to the north and east. Several residential avenues, pathways, gardens and homes are also present within the vicinity of the Site boundaries, particularly along the southwest border of the Site.
- 1.3.5 The Bygrave Road runs southwest-northeast within the centre of the northern area of the Site, dividing arable farmland. Multiple footpaths run within the north Site's boundaries, connecting to North Road, Bygrave Road and multiple residential pathways. There are also some urban features within the Site, such as the roundabout connecting the B656 and A505 to the northeast of the Site. The surrounding landscape, with the exception of the town of Baldock to the southwest, has a commensurate character to that within the Site: agricultural land, chiefly arable, interspersed by residential pockets, roads and hedgerows. The residential areas surrounding the Site are all primarily associated to the town of Baldock situated to the southwest of the Site and the village of Bygrave approximately 1 km northeast of the Site.
- 1.3.6 In the southern area of the Site the A505 (Royston Road) borders the Site from the south to the northeast; the Cambridge Train Line to the north; Wallington Road to the west and the Ashville Trading estate at the northwest border—several residential avenues, gardens and homes are also present within the vicinity of the Site boundaries.
- 1.3.7 The A507 (Clothall Road) runs southwest-southeast along the southern section of the Site, dividing arable farmland within the Site. Multiple footpaths run within the southern areas' boundaries, connecting to the B656, Wallington Road and multiple residential areas. There are also some urban features within the Site, such as the roundabout connecting the B656 and A505 to the northeast of the southern area. The surrounding landscape, with the exception of the town of Baldock to the southwest, has a commensurate character to that within the Site: agricultural land, chiefly arable, interspersed by residential pockets, roads and hedgerows. The residential areas surrounding the Site are all primarily associated with the town of Baldock situated to the southwest of the Site and the village of Bygrave approximately 1.3km northeast of the Site.

- 1.3.8 Considering the outlined above contextual features regarding the Site and its surrounding landscape, while there is some overland connectivity of the Site to its adjacent habitats, particularly from the north, the presence of multiple dispersal barriers within the vicinity, including highways and rail lines, is deemed to leave dispersal capacity of terrestrial fauna to/from the Site as moderate. It is further estimated that more mobile, such as bats, birds, and insects, would be more readily able to commute to the Site from surrounding habitats.

1.4 Ecological Context

- 1.4.1 An ecological appraisal was undertaken at the Site in 2015 (Ecus, 2016), which included a badger survey, great crested newt assessment and reptile survey. The principal habitats recorded were arable, improved grassland, hedgerows, scattered trees, scrub, semi-improved grassland, tall ruderal, amenity grassland, buildings and hardstanding. The survey identified the potential for the following protected species/species groups: great crested newt, badger, bats, breeding birds, common reptiles.
- 1.4.2 WYG carried out a suite of breeding bird surveys in 2017 (WYG, 2017a & WYG, 2017b). The Site was found to support a population of corn bunting considered to be of County importance. Other farmland birds were also recorded and this assemblage was also considered to be of County level importance. Subsequently, an ES was prepared and an outline planning permission submitted in January 2018. However, the application was subsequently withdrawn.
- 1.4.3 In 2019 the ecological appraisal was updated along with a series of species-specific assessments including corn bunting and reptile reports which were produced between 2019-2020. These reports are as follows:
- Baldock North - Updated Ecological Appraisal (2019a);
 - Baldock Southeast - Updated Ecological Appraisal (2019b);
 - Baldock Reptile Survey Report (2019c);
 - Baldock Southeast - Bat Activity Report (2020a);
 - Baldock North – Bat Activity Report (2020b);
 - Baldock North and Southeast - Corn Bunting Report (2020c); and,
 - Baldock Mitigation Sites – 2019 Corn Bunting Survey Report (2020d).
- 1.4.4 The most recent baseline was undertaken by BMD in July 2023. The details of this assessment are presented in BMD.21.0045.RPE-TN.807.A.-.Verification Assessment.
- 1.4.5 No further previous ecological surveys or assessments are known for the Site or adjacent land.

2. APPROACH

2.1 Introduction

2.1.1 This report has been produced with reference to current guidelines for ecological assessments (e.g. CIEEM, 2020 and 2020a) although adapted to be appropriate for the conditions on Site. Reference was also made to BS42020:2013: Biodiversity – Code of Practice for Planning and Development.

2.1.2 The assessments at the Site have comprised the following:

- Reptile survey (summer/autumn 2022);
Bat:
 - Emergence surveys at suitable tree features and buildings in 2023 (BMD.21.0045.RPE-P2.808)
 - Activity survey transects as well as use of static detectors (summer 2022)
 - Breeding Bird Survey with a focus on corn bunting (summer 2022).
 - Corn bunting mitigation sites assessment conducted in 2023 (Ref: BMD.21.0045.RPE-TN.810.A).
 - Botanical Verification conducted in July 2023 (Ref:BMD.21.0045.RPE-TN.807.A).

2.1.3 Full survey methodologies are provided below. Details of dates, weather conditions and a review of survey limitations are provided in the results sections below.

2.1.4 Definitions of technical terms used in this report are provided in the Glossary in Section 7. Common names of species are used throughout the report with scientific names provided in Section 7.2

2.2 Bat Surveys

Inspection of Buildings, Other Structures and Trees for Potential Roost Features

2.2.1 An examination of numerous trees and sixty buildings/structures within the Site and the associated Zone of Influence was undertaken by a Natural England licensed bat surveyor, following standard guidance as set out within the Bat Conservation Trust's (Colins, 2016). The presence of features such as cracks, splits, rot holes, knot holes, cankers, old woodpecker holes, hazard beams or other vertical and horizontal cracks and splits in stems and branches, partially detached dense coverings of ivy (stem diameters >50mm), partially detached plated bark, or bat, bird or dormice boxes, which provide potential roosting opportunities for bats, were all searched for.

2.2.2 Following this assessment buildings/other structures and trees were assigned a value of High, Moderate, Low or Negligible bat roosting potential. Table 2.1 below provides the detailed criteria for each of these categories. The buildings/other structures and trees are assessed in the preliminary ecological assessment (BMD.21.0045.RPE-P1.801.-.Ecology.A). All buildings within the Site are shown on BMD.21.0045.DRE.909.

Table 2.1 Assessment of the Likelihood of Buildings/Other Structures and Trees to Support Roosting Bats.

Suitability of Feature to Support Roosting Bats	Description of Roosting Features – Buildings/Other Structure and Trees
High	A building/other structure or tree with one or more potential roost sites that are suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions ¹ and surrounding habitat.
Moderate	A building/other structure or tree with one or more potential roost sites that can be used by bats due to their size, shelter, protection, conditions ¹ and surrounding habitat, but unlikely to support a roost of high conservation status (e.g. a maternity or hibernation roost).
Low	A building/other structure or tree of sufficient size and age to contain potential roosting features, but with none seen from the ground; or features seen with only very limited roosting potential ² .
Negligible	A building/other structure or tree that supports negligible roosting features likely to be used by roosting bats.
Notes Table adapted from BCT's publication entitled 'Bat Surveys for Professional Ecologists - Good Practice Guidelines' (2022), Table 4.1, Pg.35. ¹ For example, in terms of temperature, humidity, height above ground level, light levels or levels of disturbance. ² This system of categorisation aligns with BS 8596:2015 'Surveying for Bats in Trees and Woodland' (BSI 2020)	

2.2.3 Following the assessment of each structure's or trees' potential to support roosting bats, and following the guidance detailed within BCT's Guidelines (Colins, 2016), it was possible to determine the extent of Phase 2 dusk emergence survey work to be carried out at each feature. Table 2.2 provides an overview of the required survey effort. Other considerations included the extent of any evidence of bats recorded during the initial inspection survey work, and /or any constraints regarding access to inspect each structure or tree.

Table 2.2 Assessment of the Likelihood of Buildings/Other Structures and Trees to Support Roosting Bats.

Low Roost Potential	Moderate Roost Potential	High Roost Potential
Buildings - 1 dusk emergence and /or pre-dawn re-entry survey. Trees - 1 dusk emergence and /or pre-dawn re-entry survey.	2 survey visits. To include 1 dusk emergence and 1 pre-dawn re-entry survey.	3 survey visits. To include 1 dusk emergence and 1 pre-dawn re-entry survey. The third survey can be a dusk or dawn survey.
NOTE: Two surveys carried out within the same 24 hour period constitute 1 survey Table adapted from BCT's publication entitled 'Bat Surveys for Professional Ecologists - Good Practice Guidelines' (2016), Table 7.3, Pg.52.		

2.2.4 Bat roost surveys have been undertaken this season (2023) for the one building with high suitability for roosting bats, four buildings with moderate suitability and the subsequent nine buildings which were assessed as having low suitability in the initial assessment. Two trees (TN17 and TN39) were identified as having low suitability for roosting bats will additionally be subject to one evening emergence survey. All locations of bat potential buildings and trees are shown on the Phase 1 Habitat Plan (Ref BMD.21.0045.DRE.901 and 909 as presented in the Appendix).

2.2.5 All of the other trees situated within the study area or associated Zone of Influence were considered to have Negligible potential to support roosting bats and as such detailed bat

emergence survey work will not be undertaken upon any of these features. Building descriptions and features recorded are located within BMD.21.0045.RPE/P1.801.A.-.Ecology

Dusk Emergence Survey Method 2023

- 2.2.6 Dusk emergence surveys aim to identify any bats leaving potential roosting features identified during the bat roost potential assessment. This survey method aims to identify the bat species and number of bats utilising a structure or tree in order to help determine the type of bat roost, if present. In this regard, during the emergence surveys, surveyors will employ Echo Meter (EM2 Touch Pro+) bat recorders to aid identification of any bats observed. In line with BCT guidance, at dusk surveyors will be in position approximately 15-20 minutes prior to sunset, remaining in place for 1.5 hours.
- 2.2.7 In addition, during the evening dusk emergence surveys undertaken at the Site, the opportunity may be taken to monitor general bat activity levels in the local vicinity in order to supplement the specific bat activity survey work undertaken within the study area.

Bat Activity Surveys 2022

- 2.2.8 As per BCT best practice, dusk bat activity surveys were undertaken across the entire study area during suitable weather conditions across 3 visits in 2022 (see detailed survey plan BMD.21.0045.DRE.907 - Bat Activity Results). Transects were devised to cover the key habitats across the site; Transect plans are provided in the Appendix. The transects focused on areas of suitable bat foraging and commuting habitat (i.e. all field boundaries, woodland edge, woodland rides, and the Dismantled Railway Corridor). An appropriate number of listening station stops were adopted along the chosen route, with 3 minutes spent at each stop.
- 2.2.9 Bat activity survey work involved surveyors using Bat Box Duet and EM3+, EM-Touch 2 (for iOS) and AnaBat express bat detectors to aid identification of any bats observed along each transect through the study area. Over the course of each transect, the species, number, and direction of travel of all bats heard and/or seen was recorded. The aim of this survey work is to develop a picture of the use of the Site and adjacent habitats by bats, with the aim of quantifying the activity and mapping the key areas utilised by bats.

Static Bat Detectors

- 2.2.10 Bat activity surveys were also supplemented with the use of remote static recording (Anabat Express) within three areas of the Site. One along the edge of a small woodland off Site abutting an area of grassland within the Site to the south west. One situated within the centre of the Site within a hedgerow along the railway line. And a third on a tree abutting linear features. These were carried out in July, August and September of 2022, for five-night recording periods of each month.

Sonogram Analysis

- 2.2.11 All bat registrations recorded during the bat survey work were analysed using Analook W v.3.7 (for analysis of ZC files) and Anabat insight to verify the species recorded during survey work. Registration verification was undertaken by a suitably experienced ecologist with reference to

known sonogram parameters. Using Analook, individual files were labelled where bat species could be identified with reasonable certainty. Calls that appeared to have been produced by bats but could not reliably be attributed to a species were labelled with a "sp." or similar identifier, where possible (e.g. Myotis 'sp.').

2.3 Breeding Bird Survey

Methods

2.3.1 The assessment comprised assessing targeted breeding birds within the survey area of the proposed development site following current protocol, with particular attention being made to corn bunting in this case. This involves a number of elements:

- Desk study (including a review of previous ecological reports pertaining to breeding birds and published literature of corn bunting ecology).
- Review of The Birds of Hertfordshire (annual reports).
- Four transect surveys to identify assemblages of breeding birds at the Site by recording visual and vocal observations on to Site maps.
- Breeding assemblages that had been identified were subjected to criteria assessments to determine the breeding status of each species identified at the Site (i.e. confirmed, probable, possible, not breeding).
- The assemblage of breeding birds was assessed using Fullers criteria to determine the level of importance. Individual breeding populations were assessed with reference to the Hertfordshire Bird Report 2014 and The Birds of Hertfordshire 2015.

2.3.2 The survey methodology broadly followed that set out by the Common Bird Census (CBC) devised by the British Trust for Ornithology (BTO) which is used to record territorial activity of corn buntings (and selected other species) within a specified survey area. To achieve this, four surveys were conducted across the Site during suitable weather conditions (calm, dry days with good visibility) and between the hours of 0500 hrs and 1200 hrs whilst birds are most likely to be active.

2.3.3 During surveys, breeding behaviours that were recorded included displaying, singing, territorial activity, agitated or defensive behaviour or a pair of adult birds observed together. Each species of bird encountered were identified either visually or through vocalisations. The presence of bird species and types of activities observed were recorded onto maps of the Site to allow the assessment of breeding territories to be determined.

2.3.4 All breeding bird species identified at the Site were assessed using the criteria set out within Table 2.3.

Table 2.3 Criteria used to determine breeding bird territories during surveys conducted in 2019

Breeding status	Registration description
Confirmed breeding territory	Two registrations of a particular species displaying breeding behaviour within a territory range over the total survey period
	A single record of a nest containing eggs or young

	Two registrations of a difficult species (e.g. nocturnal species such as owls or woodcocks) within a territory range over the total survey period
Probable breeding territory	Present in suitable habitat in the same location (within normal territory range) on two occasions
	Displaying breeding behaviour on one occasion only ¹
Possible breeding territory	Present in suitable habitat on one occasion only
Non-breeding	Present in habitat not suitable for breeding
	Immature birds (e.g. raptors and gulls not of breeding age)
Notes 1. Breeding behaviour includes displaying, singing, territorial activity, agitated or defensive behaviour or a pair of adults together	

2.4 Evaluation and Review

2.4.1 Following the desk study and field surveys, the following assessments were undertaken:

- The value of the Site in terms of supporting breeding birds of varying species to determine the type of habitats available for breeding birds to occupy;
- The use of the Site by breeding birds for nesting, foraging and undertaking breeding behaviours;
- Where present, the estimated territories and criteria of breeding bird assemblages have been estimated from observations across the survey Site;
- A review of likely impacts resulting from the proposed development on breeding bird assemblages.

2.4.2 The most recent review of breeding birds was undertaken during 2021 (Birds of Conservation Concern: BoCC 5). The review subdivides populations of breeding birds into the three BoCC categories:

Red list species – species of highest conservation concern.

Amber list species – species experiencing moderate declines in population or range.

Green list species – species of no immediate conservation concern.

2.4.3 Breeding assemblages on the Site were assessed using criteria set out by Fuller (1980). The adapted scale outlined in the CIEEM guidelines (2018) will be used to reflect the decline in arable species since Fullers guidelines were originally published, see Table 2.4.

Table 2.4 Criteria for assessing the level of importance for breeding birds

Number of breeding species	Level of importance
Up to 24 breeding species	Local importance
25 – 49 breeding species	District importance
50 – 69 breeding species	County importance
70-84 breeding species	Regional importance
85+ breeding species	National importance

2.4.4 The importance of breeding bird populations has been assessed at four levels:

- Regional: contains a significant proportion of the breeding population of birds within the counties of Cambridgeshire, Bedfordshire and Hertfordshire.
- County: supports a significant proportion of the breeding population of a species within Hertfordshire, or notable populations of species of conservation concern.

- District: those considered to be significant in a localized area (in this case the local authority area – North Herts Council)
- Local: significant at a parish level.

Limitations

- 2.4.5 The transect route was followed as closely as possible to the original route used in the 2019 WYG survey. The original transect routes were altered slightly as a result of electric fencing for pony paddocks hindering access on foot. Such restrictions were considered minor, e.g. surveying open habitat at a distance or on the opposite side of a fence line. The transect route followed was varied during each visit to ensure various habitats were visited at different times of the morning. Given the nature of the Site disturbance was a factor as business and farming activities occur throughout the day, along with public access. It was considered unlikely the levels of activity noted in 2022 differed significantly from those experienced by breeding birds during the 2019 breeding season. These changes to the route followed were minor and did not result in areas of the Site being excluded from survey effort.
- 2.4.6 It should be noted that the survey undertaken in 2022 was primarily focused on mapping corn bunting activity. Notes of sightings and territorial activity of any red list farmland birds was noted but information on amber list species such as wren, song thrush and common whitethroat was not collected. Similarly, where breeding activity was likely to be primarily off-site (such as for common swift and house sparrow) territorial activity was not collected.
- 2.4.7 The weather conditions were considered to be suitable throughout the surveys with no significant constraints encountered. The surveys were conducted between April 2022 - July 2022. This is the recommended survey period.
- 2.4.8 The areas around the active nests of Schedule 1 species were avoided once located to prevent disturbance.

Wintering Birds

- 2.4.9 The wintering bird walkover survey was undertaken following feedback from the Local Planning Authority Ecologist. It was agreed that a single walkover survey would be undertaken to provide an initial indication of the wintering bird population within the Site. The results of the walkover survey would be used to determine the need for any additional wintering bird surveys and inform the mitigation strategy for the proposed development. Wintering bird surveys had been scoped out of supporting information for the previous applications/Environmental Statements.
- 2.4.10 The wintering bird survey methodology broadly followed those set out for the Common Bird Census (CBC) devised by the British Trust for Ornithology which is used to record bird activity within a specified survey area. All bird activity was recorded onto site maps and were later assessed to determine the approximate population size for each wintering species recorded.
- 2.4.11 The survey was undertaken on 24/02/23 by Jeff Picksley MCIEEM, an experienced ornithologist with over 20 years of experience surveying breeding and wintering birds. The survey commenced at 08:00 and concluded 13:35. Following the conclusion of the transect survey two fields where

large corn bunting flocks had been recorded were revisited with the intention to recount the flocks present. In both fields the flocks had dispersed. The surveyor left site at 14:50.

- 2.4.12 Weather conditions during the survey were fine and dry with sunny spells with cloud cover varying from 5/8 to 8/8 over the survey period. There were several short spells of drizzle or light rain during the morning period but these had no discernible impact on bird behaviour. There had been a slight overnight frost with a light NE wind (BF1-BF3) throughout the survey.

2.5 Reptile Survey

- 2.5.1 During the initial ecological assessment suitable reptile habitat was identified within the Site and as such detailed Phase 2 survey work was undertaken between May and July 2022 (i.e. during one of the optimal survey periods for reptile surveys) to determine presence /absence of common reptiles (and to provide an initial assessment of population size, where present).
- 2.5.2 A total of 146 1x1 m and 1x1 m sheets of thick roofing felt were placed within areas of suitable reptile habitat across the Site to act as artificial refugia, as presented on the Reptile Survey Plan (Appendix: Ref BMD.21.0045.DRE.905). These refugia provide shelter and heat up more quickly than their surroundings in the morning and can remain warmer than their surroundings in the evening. As such, reptiles being ectothermic (cold blooded), use them to bask under and raise their body temperature which allows them to forage earlier and later in the day. Therefore, checking the refugia in the morning and/or late afternoon should reveal reptiles, if they are present at a site.
- 2.5.3 The refugia were left in place for 7 days in order to 'bed-in' and enable any reptiles present to find them. Subsequent to this the refugia were checked over 7 survey visits during suitable weather conditions, as recommended in Herpetofauna Groups of Britain and Ireland (HGBI) Best Practice and Lawful Guidance. In addition, careful visual observations were made during each survey visit to search for any basking or foraging reptiles within key habitat areas on the Site.
- 2.5.4 Furthermore, care was taken to arrive at the Site early in the morning when appropriate to ensure the reptile refugia had not become too hot, which would potentially result in reptiles dispersing from underneath the refugia into adjacent areas of suitable habitat. Moreover, days with optimal weather conditions were targeted where possible, (i.e. cloudy days with sunny spells or days forecast to have short periods of heavy rain with sunny intervals). Therefore, it is considered that an accurate and robust assessment of reptile activity at the Site has been made.

2.6 Other Species – Incidental Observations

- 2.6.1 The general faunal activity was recorded during the course of the survey work, including incidental sightings of birds, mammals and invertebrates, with particular attention paid to any potential use of the Site by protected, rare, notable, or Priority-listed faunal species.

3. RESULTS

3.1 Bats

Bat Dawn/Dusk Surveys

- 3.1.1 A total of 60 buildings were assessed for suitability for roosting bats within the initial PEA assessment. One building was assessed as having high suitability for roosting bats, four buildings were assessed as having moderate suitability and nine buildings were assessed as having low suitability buildings in the initial assessment. Access constraints onsite led to buildings B51 and B52 unable to be assessed to determine its suitability to support roosting bats at the time of the survey. All other buildings onsite were assessed as having Negligible suitability to support roosting bats due to a lack of suitable access points or roosting locations. Building locations are presented on BMD.21.0045.DRE.909.
- 3.1.2 Limited trees within the Site were assessed as having low-moderate suitability for roosting bats. Two trees (TN17 and TN39) were identified as having low suitability for roosting bats will additionally be subject to one evening emergence survey. This included a tree within H8, a field maple with a south-facing trunk cavity assessed as low suitability. Similarly, the dense area of scrub associated with H9 included a semi-mature ash with features suitable for roosting bats.
- 3.1.3 Nocturnal surveys have been undertaken on 14 buildings and two trees through the optimal period (May-September 2023). No roosts were recorded throughout the surveys, full results are presented within Phase 2: Further Ecological Assessment: Bats (Ref: BMD.21.0045.RPE-P2.808).

Bat Activity Surveys

May 2022

- 3.1.4 Within the north of the Site, the surveyor recorded the echolocation calls of common pipistrelle, *Myotis* sp., *Nyctalus* sp., *Plecotus* sp. and Serotine bat. All these records were focused within the northeast of the Site where bats were recorded commuting along the hedgerow features adjacent to the east of North Road and at Hedgerow 3 north of Bygrave Road. Higher levels of activity were recorded at the northeast peripheries of the Site along connecting hedgerows within the arable landscape.
- 3.1.5 Within the south of the Site, the surveyor recorded the echolocation calls of exclusively *Nyctalus* sp. The species was recorded commuting around the peripheries of the Site, along the northeast boundaries of Clothall Common, along dense scrub south of the railway line and northeast of the Bygrave Allotments. Highest levels of activity were recorded along the peripheries of the Clothall Common grassland parcel at the northeast boundary to Royston Road.
- 3.1.6 Due to the difficulties of identifying some bat echolocation calls to species, some recordings were only identified to genus level, e.g. *Myotis* sp., *Plecotus* sp. and *Nyctalus* sp.
- 3.1.7 As presented on the Bat Activity Plan (Drawing BMD.21.0045.DRE.907) in Appendix A, the majority of bat activity was located along the peripheries of the field parcels and roadsides onsite

where commuting bats were identified using the hedgerows, scrub and trees. In contrast the arable field parcels and footpaths exhibited an absence of bat species presence.

August 2022

- 3.1.8 Within the north of the Site, the surveyor recorded the echolocation calls of common pipistrelle and *Nyctalus* sp. Bats were recorded foraging and commuting along the extent of Bygrave Road, along the treeline of Hedgerow 3 and Hedgerow 4 and an additional common pipistrelle was recorded commuting along the field margin north of the railway. Higher levels of activity were recorded at the hedgerow peripheries of arable fields, particularly at the dark corridor provided by the treeline running along Hedgerow 3 north of Bygrave Road.
- 3.1.9 Within the south of the Site, the surveyor similarly recorded the echolocation calls of common pipistrelle and *Nyctalus* sp. Bats were recorded commuting and foraging at the southern extent of the allotments onsite adjacent Clothall Road and along the semi-improved grassland north of the A505 road. Highest levels of activity were recorded at the peripheries of the Clothall Common semi-improved grassland patch north of the A505 roadway.
- 3.1.10 Due to the difficulties of identifying some bat echolocation calls to species, some recordings were only identified to genus level, e.g. *Nyctalus* sp.
- 3.1.11 As presented in the Bat Activity Plan (Drawing BMD.21.0045.DRE.907) in Appendix A, the majority of bat activity was located along the peripheries of the field parcels, within rough grassland and on roadside edges onsite where commuting and foraging bats were identified along the hedgerows, rough grassland and trees, similar to the results of the May 2022 activity survey. In contrast the arable field parcels and footpaths exhibited an absence of bat species presence. Activity was focused around the peripheries associated with scrub, hedges and trees.

September 2022

- 3.1.12 Within the north of the Site, the surveyor recorded the echolocation calls of common pipistrelle, Noctule bat, *Nyctalus* sp. and *Plecotus* sp. Bats were recorded foraging and commuting along the extent of Bygrave Road, within the scrubland north of the railway corridor, commuting along the hedgerow at the north-eastern boundary of Site and an additional common pipistrelle was recorded commuting along the field margin north of the railway. Higher levels of activity were recorded at the peripheries of arable fields, dark roadways and at the northern extent of the railway corridor.
- 3.1.13 Within the south of the Site, the surveyor similarly recorded the echolocation calls of common pipistrelle, Noctule bat, *Nyctalus* sp. and Serotine bat. Bats were recorded commuting and foraging along the peripheries of the grassland at Clothall Common, within the treelines present at Hedgerow 28 and at the southern periphery of the adjacent field. Highest levels of activity were recorded at the peripheries of the Clothall Common semi-improved grassland patch south of Bygrave.
- 3.1.14 Due to the difficulties of identifying some bat echolocation calls to species, some recordings were only identified to genus level, e.g. *Nyctalus* sp. and *Plecotus* sp.

- 3.1.15 As presented on the Bat Activity Plan (Drawing BMD.21.0045.DRE.907) in Appendix A, the majority of bat activity was located along the peripheries of the field parcels, within rough grassland and on roadside edges onsite where commuting and foraging bats were identified using the hedgerows, rough grassland and trees, similar to the results of the May and August 2022 activity surveys.
- 3.1.16 In contrast the arable field parcels and footpaths exhibited an absence of bat species presence. Activity was focused around the peripheries associated with scrub, hedges and trees. A wide range of bat species were identified using periphery features onsite to commute through the landscape, additionally tree lined hedgerows, rough grassland and scrubland patches were identified for foraging activity.
- 3.1.17 It should be noted that during the verification visit offsite habitat including the railway corridor have since been intensively managed, removing a lot of the corridor habitat including scrub and scattered trees. This is likely to impact commuting bats within the area, removing important connecting habitat and a commuting route.

Bat Static Recording

- 3.1.18 Table 3.1 provides a summary of the static data results at the Site during May, August and September 2022.

Table 3.1 Summary of static recording results in 2022

	May (25-29)			August (23-27)			Sept (26-30)			TOTAL
	C	E	F	C	E	F	C	E	F	
Common pipistrelle	0	0	0	0	3	1	10	0	0	14
Soprano pipistrelle	447	8	9	15	55	42	108	14	3	701
Myotis Sp.	1	0	0	0	0	3	1	0	2	7
Lesser noctule	6	14	8	47	50	32	5	78	12	252
Noctule	0	1	0	0	16	3	1	3	1	25
Barbastelle	0	0	0	0	2	1	0	1	4	8
Brown long-eared	0	0	1	0	9	1	0	0	0	11
Serotine	0	1	1	0	0	0	0	0	0	2
	454	24	19	62	135	83	125	96	22	1020

- 3.1.19 The surveys recorded eight species of bat using the hedgerows, grassland and woodland edges; common pipistrelle, soprano pipistrelle, myotis sp., lesser noctule, noctule, barbastelle, brown long-eared and serotine.
- 3.1.20 Whilst it is not possible to gauge the number of times a single bat passes the recorder, meaning that a count of individual bats is not possible, the number of bat passes has been calculated to give an index over a nightly period, recording from sunset to sunrise.
- 3.1.21 The general level of bat activity along these areas was deemed to be low however, with the number of bat passes per hour ranging from 1.5 to 35.

- 3.1.22 The majority of remote static detector bat recordings of these locations were of soprano pipistrelles, with 68% of all recordings being from this species.

3.2 Breeding Bird Survey

- 3.2.1 During April-July 2022, a total of 15 bird species were recorded holding territories at the Site during the targeted corn bunting surveys, with the following notable species recorded:

- Birds of Conservation Concern (BTO, 2021) with nine Red list bird species holding territories on Site and six Amber list species holding territories; and
- Breeding population of county importance of corn bunting was recorded;

Field Survey Results

- 3.2.2 Table 3.2 shows the status of selected red and amber list species recorded within the Site during the 2022 surveys. The table also noted the presence of other species onsite where territorial mapping was not undertaken in either 2019 or 2022. Each species is listed and coloured appropriately for those that occur on the Red list or Amber list (BoCC4); Schedule 1 (WCA) species are also included in the table.

Table 3.2 Species holding territory during 2022 survey

Species	BoCC Status ¹ (* WCA S1)
Common whitethroat	Amber
Corn bunting	Red
Dunnoch	Amber
Greenfinch	Red
Grey partridge	Red
House sparrow	Red
Linnet	Red
Meadow pipit	Amber
Reed bunting	Amber
Skylark	Red
Song thrush	Amber
Starling	Red
Woodpigeon	Amber
Wren	Amber
Yellow wagtail	Red
Yellowhammer	Red
Notes	
1. See Glossary for definitions	

- 3.2.3 Of the species recorded to hold territories, nine were Red list species and seven were Amber list species.

- 3.2.4 Most of the onsite habitats are suitable for a variety of common, notable and protected nesting birds; particular features of note are the hedgerows, rough grassland areas, scrub and ruderal habitat. It is considered likely that the Site hosts a range of nesting opportunities for the birds within the local landscape, and thus is considered to be important at a local level with regard to bird species.

- 3.2.5 The previous surveys of breeding corn bunting onsite have identified a population of county importance breeding within the Site. The 2022 survey results confirmed the continued presence of a breeding population representing around 10% of the singing male corn buntings within the county. The population of singing males within the Site appears to have remained relatively stable over the period 2017-2022.
- 3.2.6 A summary of survey findings from the 2019 and 2022 transect surveys are provided below. Maps showing the distribution of confirmed, probable and possible territories for Red, Amber and Schedule 1 species across the Site are provided in the Appendix: Plans.

Corn Bunting

- 3.2.7 Corn buntings have been recorded holding territories within the Site during the 2017 to 2022 surveys undertaken. The survey carried out in 2019 recorded a total of 14 corn bunting territories across the north and southeast Site (10 in the north and 4 on the south east). The 2022 survey results identified a total of 20 corn bunting territories within the Site. This figure is higher than the 2019 survey when 14 territories were recorded. The 2022 survey findings are similar to those of the 2017 survey where 18 corn bunting territories were recorded.
- 3.2.8 There were noticeable clusters of territorial activity across the Site within certain habitats. The hedgerow running along the northern boundary of the Site (Bygrave Common) held five singing corn bunting males. A further five singing males were recorded holding territories either side of Bygrave Road/Ashwell Road. In the southern part of the Site additional singing corn bunting were recorded in the area of open land east of Clothall Common and three were located in the field south of Clothall Common (north of A505). Maps are provided in the Appendix (Plans) showing the distribution of singing male corn bunting within the Site.
- 3.2.9 Birds were recorded using a variety of song posts including cereal heads and weed species within crops, various trees, fence posts, telegraph wires and hedgerows. Birds were also noted singing from lumps of mud in cultivated fields early in the season. Male corn bunting were also noted singing from trees planted along the edge of the houses at Clothall Common, from the fence of the allotments and within the area of open space at the eastern end of Clothall Common suggesting male birds were not avoiding areas with high levels of human activity.
- 3.2.10 It is likely that the Site will support wintering corn bunting, although the size of the wintering population may be lower than the breeding population due to dispersal. Corn bunting tend to winter in flocks and there is a possibility that the Site may attract corn bunting from adjacent areas depending on the availability of suitable roost sites and foraging areas. Wintering activity is considered further in the section below.
- 3.2.11 The 2022 survey confirmed that corn bunting heavily utilise the habitats onsite for breeding territories, in particular the arable land that dominates the majority of the Site, alongside hedgerows, treelines and the area of rough grassland and scrub at the eastern side of Clothall Common.

Wagtails

- 3.2.12 Yellow wagtail were recorded with established breeding territories within the arable landscape north of Bygrave Road during the 2019 and 2022 surveys. A total of four breeding territories were identified within these field parcels alongside an additional territory identified within an adjacent eastern field parcel to Bygrave Common. These findings confirm that yellow wagtail are utilising the onsite farmland habitat for breeding and foraging.

Wren

- 3.2.13 Multiple singing males were identified during the survey visits utilising the farmland, hedgerows and scrub onsite. Whilst territories for the species were not mapped it is considered highly likely that wren are utilising the viable habitat onsite for breeding and foraging throughout the year.

Pigeons and doves

- 3.2.14 Single and numerous pairs of woodpigeon were identified utilising the Site's grassland, farmland, treelines and hedgerows during numerous survey visits. It is considered highly likely that woodpigeon are utilising viable habitat onsite for breeding and foraging throughout the year.

Warblers

- 3.2.15 Common whitethroat were noted as present onsite during the 2022 survey. It is likely that the suitable hedgerows, scrub and open land onsite are utilised by the species to some degree.

Larks and pipits

- 3.2.16 The rough grassland on Site supported good numbers of breeding skylark with 19 confirmed territories recorded in the 2022 survey. The territories were spread across the grassland onsite, in particular the grassland west of the A505, throughout all fields along Bygrave Common and field parcels north of the railway crossing.
- 3.2.17 Breeding meadow pipit were abundant across the grassland habitats on Site, with the south-eastern rough grassland adjacent the A505 and Royston Road being particularly favoured. A total of 6 confirmed territories were recorded during the survey period.

Dunnock

- 3.2.18 The complex social structure of breeding dunnock, with male territories often occupied by an alpha and beta male, along with regular polyandry and polygyny means that the number of breeding dunnock are potentially under recorded by traditional survey techniques. Three territories were recorded within the 2019 survey, with confirmation of presence and probably breeding being confirmed within the 2022 survey.

Thrushes

- 3.2.19 Song thrush were found to be widespread throughout the 2022 surveys utilising the periphery features onsite.

Starling

- 3.2.20 Presence of the species onsite was confirmed during the 2022 surveys, the grassland and field margins on Site offer suitable foraging habitat for starling. Whilst there is an absence of trees with suitable cavities for nesting onsite and breeding territories for this species were not noted, some of the buildings within the area could offer suitable nesting cavities for starling to utilise.

Grey Partridge

- 3.2.21 Grey partridge was recorded during the 2019 and 2022 surveys with strong associations to the arable areas onsite. One breeding territory was confirmed onsite within 2022 within the north-eastern field parcel adjacent the Salisbury Road residential block.

Finches and buntings

- 3.2.22 Greenfinch were recorded during the 2022 survey period. Whilst the majority of the Site is of open nature; the hedgerows, scrub and treelines surrounding the perimeters of fields may be utilised by greenfinch for foraging and commuting.
- 3.2.23 Linnet were recorded foraging and calling within the scrub at the south of the Site adjacent Clothall Road where the mix of scrub and rough grassland provides ideal breeding habitat. Linnet nest semi-colonially and only defend a small territory around the nest. Birds will forage in groups at suitable sites during the breeding season making estimation of breeding territories difficult. The assessment of four probable territories onsite is based on peak counts of birds made in suitable habitat over a series of visits.
- 3.2.24 Breeding yellowhammer was confirmed onsite within the 2022 survey, a total of two breeding territories were identified within the north Site, strongly associated with the arable areas of the Site. These territories were identified along the boundary hedgerows at the northern extent of the Site.
- 3.2.25 A single reed bunting male was identified singing onsite during the July 2022 survey visit.

Summary of Breeding Bird Presence

- 3.2.26 During the four targeted 2022 visits, a total of 16 bird species were recorded holding breeding territories within the Site. Of the 15 species recorded, 9 are Red list species and the remaining 6 are Amber listed. An overview of breeding distribution during the surveys are included in Appendix A.
- 3.2.27 Table 3.3 provides a summary table of bird species observed during the 2019 and 2022 surveys along with their breeding status and territories at the Site.

Table 3.3 Summary of Red and Amber listed bird species recorded in 2019 and 2022 (shading indicates Red/Amber listing; bold Schedule 1)

Species observed on Site	Breeding status during 2019	Breeding status during 2022	Habitats of potential use on Site
Common whitethroat	Territories not mapped	Present – territories not mapped	Grassland, hedgerows and scrub

Species observed on Site	Breeding status during 2019	Breeding status during 2022	Habitats of potential use on Site
Corn bunting	14	20	Arable landscape, rough grassland and scrub
Dunnock	3	Present – territories not mapped	Scrub, hedgerows, ruderal and farmland
Greenfinch	Territories not mapped	Present – territories not mapped	Hedgerows, treelines and scrub
Grey partridge	2	1	Grassland, farmland and hedgerows
House sparrow	Territories not mapped	Present – territories not mapped	Scrub, hedgerows and grassland for foraging
Linnet	3	4	Farmland, grassland and scrub
Meadow pipit	7	6	Grassland – territories within south-eastern grassland parcel
Reed bunting	Territories not mapped	Singing male noted in July	Farmland and grassland for foraging
Skylark	36	32	Farmland and grassland
Song thrush	1	Present – territories not mapped	Hedgerows, treelines and grassland
Starling	Territories not mapped	Present – territories not mapped	Farmland and grassland
Woodpigeon	Territories not mapped	Present – territories not mapped	Hedgerows, treelines, farmland and grassland
Wren	Territories not mapped	Present – territories not mapped	Hedgerows, treelines, scrub and grassland
Yellow wagtail	4	3	Farmland, hedgerows and grassland
Yellowhammer	3	2	Farmland, hedgerows and grassland

3.3 Wintering Birds

- 3.3.1 Two large flocks of corn bunting were recorded during the survey. The first was present feeding on stubble north of Royston Road (B656). An initial flock of c70 birds divided with c30 birds heading north over the railway and out of view and 40 birds remaining on the stubble field. Later in the survey a flock of 34 birds were recorded on a cultivated field north of Ashwell Road. It was assumed this group was part of the initial flock of c70 birds seen earlier in the day.
- 3.3.2 Approximately 20 minutes after the flock of 34 birds had been recorded a large flock (estimated to be c100 birds) was seen and heard over the same field. The flock was flying along the ridge line so an accurate count was not possible although c60 birds briefly perched along the hedge that forms the eastern boundary of the Site. Although other species (such as yellowhammer or skylark) may have been present in the flock it was considered to largely comprise of corn buntings.
- 3.3.3 Across the wider Site small numbers of corn bunting were noted with singing males present and small groups recorded feeding in fields or flying over. Birds were also noted off-site to the north and south of the site. Excluding the flocks described in para 3.7.1 and 3.7.2 39 corn bunting were noted across the wider Site with a maximum group size of 4 birds.
- 3.3.4 A small number of yellowhammer were recorded during the survey, comprising a flock of 7 birds and a single bird, on the northern boundary of the site. A single reed bunting was noted in scrub close to the railway line.

- 3.3.5 A flock of 58 linnet were recorded feeding on stubble north of Baldock Road, loosely associated with the flock of feeding corn bunting. Small numbers of greenfinch (7 in total) and house sparrow (33 in total including a flock of 20) were recorded; these were mostly associated with buildings within the Site or on the edge of Clothall Common.
- 3.3.6 Only five meadow pipit were noted during the survey with all sightings made from around the area of scrub and grassland south of Baldock Road. Skylark were widespread across the site, either as individual birds or small groups (7 birds or fewer). A flock of 28 skylark was recorded feeding on the stubble field north of Baldock Road. Assuming no double counting, a total of 107 skylark were recorded on Site.
- 3.3.7 A total of 10 grey partridge were noted during the survey including a covey of five birds in the stubble field north of Baldock Road. Stock dove were mainly recorded as single birds, but a flock of 25 was noted feeding on stubble north of Baldock Road. Woodpigeon were widespread across the Site, with 134 birds recorded in total. However, no significant flocks were noted with the largest group noted only comprising 17 birds.
- 3.3.8 Small numbers of rook were noted feeding on site with birds also present around an off-site rookery south of the A505. A single raven flew south-west across the site.
- 3.3.9 Very low numbers of black-headed gull and herring gull were noted flying across the Site. A flock of 16 common gull flew south across the Site. A mixed flock of 250-300 black-headed gull and common gull was present on fields south of the A505.
- 3.3.10 Several flocks of fieldfare were recorded from within the Site during the survey. A total of 97 birds were recorded with the largest flock noted comprising 28 birds. Redwing were less numerous than fieldfare with 18 birds noted including a flock of 12 feeding on the horse paddocks. Five song thrush were recorded during the survey. Small groups of common starling were noted during the survey either foraging in fields or associated with human habitation.
- 3.3.11 A single kestrel was recorded hunting on Site during the survey. Two sightings of peregrine were made during the survey, the first bird was aged as an immature, but it was not possible to age the second bird as it flew west across the Site; two different peregrine were potentially using the Site during the survey.
- 3.3.12 Red kite were regularly recorded throughout the survey with a maximum count of 6 birds together. A bird was also noted sitting in a tree that contained a nest that appeared to have recently been furnished with new decorative material indicating a possible breeding attempt by red kite in this location.
- 3.3.13 The total numbers of wren and dunnock recorded across the Site during the survey were in single figures for both species. Table 3.4 presents the key finding of winter bird counts across the Site compared to the estimated population during the breeding season.

Table 3.4 Winter counts of key species compared to estimated population during breeding season.

Species	Territories recorded in breeding season	Total number recorded during wintering bird survey
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Corn bunting	20 (40-45)	113
Dunnock	Present - territories not mapped	9
Greenfinch	Present - territories not mapped	7
Grey partridge	1 (2)	10
House sparrow	Present - territories not mapped	33
Linnet	4 (4-8)	60
Meadow pipit	6 (12)	5
Reed bunting	1 (1 only 1 male recorded)	1
Skylark	32 (64)	107
Song thrush	Present - territories not mapped	5
Common starling	Present - territories not mapped	47
Woodpigeon	Present - territories not mapped	134
Wren	Present - territories not mapped	7
Yellowhammer	2 (4)	8

3.4 Reptile Survey

3.4.1 Table 3.5 provides a summary of the reptile survey undertaken at the Site during May and June 2022 including dates of visits, weather and observations during each visit.

3.4.2 The location of reptile tiles and key findings is presented on the Reptile Survey Plan (Drawing Ref BMD.21.0045.DRE.905, Appendix).

Table 3.5 Summary of 2022 reptile transects

Survey Visit	Weather Conditions	Air Temp	Reptile Refugia	Transect Number	Common Lizard	Slow Worm	Other Species
1 27 May	Patchy sun	12-15	Majority warm.		0	0	0
2 1 June	Sunny intervals / Light Breeze	13-16	Majority warm.	Transect 4, 8, 9 and 10	10 common lizards.	0	0
3 9 June	Sunny intervals / light breeze	14-20	Majority hot.	Transect 5, 8, and 9	4 common lizards.	9 Slow worms	2 bank voles.
4 15 June	Strong sun	15-21	All hot.	Transect 4, 5, 9 and 10	24 common lizards.	18 Slow worms.	2 bank voles.
5 21 June	Sunny	15-19	Mostly warm.	Transect 4, 9 and 10	8 common lizards.	7 Slow worms.	0
6	Patchy sun	15-19	Majority warm / some hot at finish	Transect 4, 9 and 10	5 common lizards	4 slow worms	2 bank voles.
7	Patchy sun	15-20	Majority warm / some hot at finish	Transect 6, 8, 9 and 10	10 common lizards	6 slow worms	0
Peak Count (Adults)					24	18	

3.4.3 Common lizards were recorded during six visits to the Site including adults and juveniles, with slow-worms recorded on five visits.

- 3.4.4 Transects 1-3 recorded no reptiles, therefore, it is likely that reptiles are absent from these areas.
- 3.4.5 Key main areas for reptile recordings included the field margins around arable crops to the south of the site- transects 9 and 10. Common lizards were also recorded in large open heathland field (Clothall Common) in the central transect routes. Gravid female lizards were recorded within transects 10 and 4-8. Adult common lizards were recorded during six the seven visits, with a maximum count of 24 adults recorded on 15th June 2022.
- 3.4.6 There was a population of slow worms in the field margins around arable crops to the south of the site- transect 10. Slow worms were recorded during five of the seven visits, with a maximum count of 18 adults recorded on 15th June 2022.
- 3.4.7 No other reptile species were recorded.

3.5 Other Species – Incidental Observations

- 3.5.1 During the extensive survey visits undertake at the Application Site, the following protected and notable species were also recorded:

Birds:

- Red kite - recorded throughout the arable and grassland fields;
- Common swift - small numbers of common swift were recorded over the farmland and grassland onsite during survey visits. No suitable nesting sites for this species are present on Site.
- House Sparrow - readily identified through the survey visits utilising many of the open space and peripheries of the Site. Presence of species was confirmed onsite however breeding activities for the species was determined likely to be primarily off-site and thus breeding territorial activity was not mapped.
- Plants:
 - Lizard orchid – rough grassland in the south-east of the Site.

- 3.5.2 Other species recorded included European rabbit, red fox, blackbird, buzzard, carrion crow, chaffinch, coal tit, collared dove, goldcrest, goldfinch, great tit, jay, long-tailed tit, magpie, robin, common shrew, wood mouse, field vole, bank vole, marbled white and six-spot burnet.

- 3.5.3 On a separate survey on the 21st of May 2023 members of the Herts Invertebrate Project Ian Carle and David Carr undertook a survey within the spital hill area of the Site. These results were shared with BMD to encompass within the report.

- 3.5.4 Species of note which were recorded included:

- Small blue butterfly - recorded in good numbers which could suggest a breeding population on restricted to suitable habitat adjacent to known small blue butterfly populations along the A507, located near spital hill;
- Sandrunner shieldbug;
- Weevil species, *Tychius schneideri*, *Megalonotus antennatus* and *Argenna subnigra*

4. EVALUATION & CONCLUSIONS

4.1 Introduction

- 4.1.1 This section considers both fauna and flora to evaluate their significance within the Site. A summary of ecological constraints associated with the development is shown on BMD.21.0045.DRE.908.

4.2 Badger

- 4.2.1 Disused badger setts have previously been recorded on Site. Currently, none are considered to be active.
- 4.2.2 There is extensive commuting and foraging habitat for badger particularly in the north of the Site. These habitats included: grassland field margins, hedgerows, scattered scrub and a woodland block. The Site has several open boundaries into adjacent badger-suitable landscapes. As such, it is estimated that badger are readily able to commute to/from the Site from adjacent habitats.

4.3 Bat Roosts

- 4.3.1 Results for bat emergence surveys for all suitable buildings and trees are presented within Phase 2: Further Ecological Assessment: Bats (Ref: BMD.21.0045.RPE-P2.808). No roosts were recorded throughout the surveys.
- 4.3.2 External and internal building inspections have been undertaken on all but two buildings. A number of fully inspected buildings and structures present within the study area provide only Negligible potential to support roosting bats and therefore no emergence survey work will be undertaken upon any of these features.

4.4 Bat Activity

- 4.4.1 The surveys conducted in 2022 recorded a total of 8 species of bat using the Site:
- Common pipistrelle
 - Soprano pipistrelle
 - Myotis Sp.
 - Lesser noctule
 - Noctule
 - Barbastelle
 - Brown long-eared
 - Serotine
- 4.4.2 All of the above species are known to occur in the local and surrounding areas as shown in the local records provided in BMD.21.0045.RPE/P1.801.A.-.Ecology.

- 4.4.3 The recorded bat activity appeared to be highest along the peripheries of the Site, along the hedgerows and treelines surrounding the arable/grassland fields, dark roadways such as Bygrave Road/Ashwell road, the railway corridor and the fields north and south of Royston Road. Some additional common pipistrelle were identified commuting through the hedgerows south of Clothall Common residential block.
- 4.4.4 Bat activity throughout the Site, associated with the periphery features, was mostly limited to commuting activity along the boundary hedgerow features and commuting bats along the central, south-eastern and western boundaries. Additionally, tree lined hedgerows, rough grassland and scrubland patches were identified for foraging activity.
- 4.4.5 Low records of barbastelle were picked up within the activity surveys over August and September, with a maximum number of 4 recordings in one night. Two maternity roosts are known in Hertfordshire, therefore, it is deemed likely that these were just fly-bys and possible commuting routing routes.
- 4.4.6 It should be noted that during the verification visit offsite habitat including the railway corridor had been intensively managed, removing a lot of the corridor habitat including scrub and scattered trees. This is likely to impact commuting bats within the area, removing important connecting habitat and a commuting route.

4.5 Botanical Assessment

- 4.5.1 The results found throughout the numerous survey visits and preliminary assessment have been confirmed through an updated botanical survey undertaken during the July 2023. Full results of the verification assessment are presented within BMD.21.0045.RPE-TN.807.A
- 4.5.2 The main floristic interest within the Site are the neutral and calcareous rough grassland patches to the east of Clothall Common, the more diverse roadside/field margins such as the Bygrave Road Verge LWS and sections of connective vegetation such as the dense scrub and high-value hedgerows onsite.
- 4.5.3 The interest within the grassland parcel east of Clothall Common arises from localised patches of species characteristic of calcareous soil, alongside evidencing some species diversity throughout. Of particular note some orchid diversity is present within this parcel, including frequent pyramidal orchid, common spotted orchid and an additional single Schedule 8 lizard orchid. As an extremely rare orchid listed under Schedule 8 of the Wildlife and Countryside Act 1981 (as amended), consultation with Natural England will be required if works are to occur within this area but presently it is understood that this area is to be retained and enhanced as a greenspace. This area is to be retained within the development Connectivity between these habitats and those within the surrounding landscape is further expected to be improved by the proposals for the Site.
- 4.5.4 A number of the road verges along Bygrave Road also supported thin strips of semi-improved neutral grassland with a diverse range of grasses and herbaceous species recorded within these areas. Generally however, most road verges were less species-rich than the onsite Bygrave Road LWS with higher levels of ruderal species such as mugwort and common nettle dominating.

Some areas of calcareous tendency are present along these verges, such as lady's bedstraw and greater knapweed, however generally neutral indicators largely dominant these grassland areas. The verges appear to be infrequently managed, which has caused the habitat to decline in quality. Fertiliser enrichment had allowed coarse grasses and ruderals to flourish and crowded out all but the tallest of the more notable species. Therefore, the neutral semi-improved grassland present along Bygrave Road is considered to be of moderate ecological value at a local level. The roadside verges are to be wholly retained and further enhanced through the current proposals to further boost the floristic diversity along the calcareous soils throughout the Site.

- 4.5.5 The areas of dense scrub onsite are common habitats throughout the county, and whilst generally floristic interest throughout these areas were poor, this area is considered to be on calcareous soils with slight species diversity present within patches. The areas of dense scrub throughout the Site are to be as wholly retained where possible and would be further enhanced and managed to prevent succession into woodland.
- 4.5.6 The results found throughout the numerous survey visits and preliminary assessment have been confirmed through an updated botanical survey undertaken during the July 2023. Full results of the verification assessment are presented within BMD.21.0045.RPE-TN.807.A
- 4.5.7 It is also recommended that opportunity should be taken to enhance the character of the woodland blocks through implementing appropriate management promoting native species and encouraging a 3-dimensional structure and diverse ground flora to develop.
- 4.5.8 The hedgerow evaluation undertaken at the Application Site within the original PEA concluded the following:
- All native hedgerows within the Site contain 80% or more native woody species and therefore qualify as UK Priority Habitats;
 - Hedgerows H3, H3a H8, H9, H10, H11, H27 and H28 all contain 5 or more native woody species and therefore qualify as species-rich hedgerows. The remainder of the hedgerows present at the Site contain 4 or less native woody species and therefore do not qualify as species-rich hedgerows;
 - Hedgerow H28 was considered to qualify as an 'Important' hedgerow under the Hedgerows Regulations 1997 owing to supporting nine woody species; an associated public right of way and at least one tree per 50m of the hedgerow;
 - It should be noted that only low/very low abundances of some of the qualifying native woody species listed under the Wildlife and Landscape criteria of the Hedgerows Regulations 1997 were recorded along some of the remaining species-rich hedgerows onsite (H3, H3a, H8, H9, H10, H11 and H27). Therefore, these may not qualify as 'Important' hedgerows when fully assessed against the Hedgerows Regulations 1997 criteria.
 - None of the remaining species-poor hedgerows present at the Site are considered to qualify as 'Important' under the Hedgerows Regulations 1997.
- 4.5.9 The verification in July 2023 confirmed no change to the status or condition of the hedgerows on Site.

- 4.5.10 Where possible hedgerows should be retained within the plans and brought into appropriate management, especially H28 and all the species-rich hedgerows. The verification in July 2023 confirmed no change to the status or condition of the hedgerows on site.

4.6 Breeding Birds

- 4.6.1 It should be noted that the breeding assemblage includes species where a judgement on possible breeding is based on a limited number of records and the presence of suitable habitat for certain species e.g. linnet.
- 4.6.2 The assessment considers the significance of breeding bird populations recorded at Baldock. In order to provide context, breeding birds on Site are considered against the breeding populations within the county. The main data source used for this was Birds of Hertfordshire (2015). This is a bird report that, in the absence of a breeding atlas for the county, provide the most comprehensive evaluation of the county's bird population available. The assessment focuses mainly on those species of conservation concern (Red and Amber list species) and Schedule 1 species recorded during the survey. Records of scarce breeding species within the county are also considered even if the species concerned is not of wider conservation concern.
- 4.6.3 The breeding bird survey recorded 16 species holding territory within the survey area (confirmed, probable and possible territories). Using the criteria adapted from Fuller, this would mean the breeding bird assemblage onsite is not of any regional importance. The survey area includes extensive areas of rough grassland mixed with scrub and some areas of woodland. The areas of rough grassland support high densities of breeding skylark and meadow pipit and this habitat is likely to be scarce at a county level.
- 4.6.4 The Site supports a diverse assemblage of breeding birds, including an onsite population of corn bunting with county importance for the species. The 2022 breeding corn bunting survey has demonstrated that the Site continues to support around 10% of the singing male corn buntings present in Hertfordshire. The Site is therefore of county importance for this species. Without appropriate mitigation the proposed development of the Site will adversely affect the breeding population of corn bunting at a county level.
- 4.6.5 Although corn bunting are primarily associated with arable land in Hertfordshire, in other parts of southern England they can be found on chalk grassland and scrub habitats (e.g. Salisbury Plain in Wiltshire and Martin Down in Hampshire). An interesting feature of the 2022 survey was the presence of territorial males on the area of rough grassland and scrub at the eastern end of Clothall Common.
- 4.6.6 It may be possible to mitigate the loss of some of the corn bunting territories present in the arable fields through the provision of areas of rough calcareous grassland with scattered trees and scrub within the final scheme design. The inclusion of poles or fences should also be considered to provide song posts for corn buntings as new habitats develop. Uncultivated grassland should support a higher insect biomass than arable crops which would benefit provisioning adults.
- 4.6.7 On-site mitigation measures are unlikely to be able to fully mitigate the loss of extensive areas of arable land within the Site. As well as on-site mitigation measures, off-site habitat enhancement

is also likely to be required. Given the sedentary nature of corn buntings such measures should look to identify suitable areas close to the Site to maintain the local population. Ringing data would suggest that mitigation areas within c5km of the Site are sufficiently close to be reached by corn buntings.

- 4.6.8 There is little published research on the specific factors driving the decline in corn bunting numbers but factors such as reduced availability of seeds over winter, lack of invertebrate prey during summer and changes in crop types and harvesting patterns have all been identified as possibly factors. Mitigation measures that provide areas of seed-bearing plants over the winter months and habitat enhancement to increase the invertebrate populations across arable habitats are likely to be beneficial to breeding corn bunting.
- 4.6.9 Many farmland species are experiencing severe population declines in the wider countryside. The site supports large numbers of declining farmland species including skylark, linnet and corn bunting. These species are associated with the arable land, rough grassland and periphery features onsite.
- 4.6.10 The site also supports breeding populations of a number of other scarce farmland birds. The mitigation measures set out for corn bunting should also benefit many of these species.
- 4.6.11 The loss of arable land is likely to impact affect the small populations of skylark and yellowhammer currently breeding within the Site. Some birds are likely to be displace to similar habitats in close proximity to the Site and negative impacts are likely to be localised.
- 4.6.12 The provision of scrub and rough grassland habitats within the final design is likely to provide effective mitigation for the impacts on many of the other breeding species present on Site. The habitats along the green corridors as well as existing high value grassland should be retained where feasible as they offer a range of diverse habitats for breeding birds.
- 4.6.13 Habitat enhancement in the form of the creation of SuDS would provide additional habitat for species such as reed bunting. These habitats also provide valuable foraging resources for species such as house sparrow that feed their young on invertebrates.
- 4.6.14 The survey showed that amber list species such as dunnoek, wren and song thrush were breeding within the Site. The presence of red list species such as house sparrow and swift breeding off-site was also noted. Any scheme design should recognise the potential for new buildings to provide nesting sites for these species and landscaping plans should include swales and areas of native scrub planting to provide shelter and foraging opportunities for species such as dunnoek and song thrush.
- 4.6.15 Large, multi-phase developments, provide breeding opportunities for farmland birds during the development phases. Disturbed ground is readily colonised by annual plants that provide a source of seeds for many species. Areas of fallow land or cleared land can provide breeding opportunities for species such as skylark, lapwing and grey partridge. Opportunities to provide areas of temporary mitigation during the development of the site should be considered, as short-term increases in local populations of some species can occur when suitable habitat are present, benefiting the local bird populations.

- 4.6.16 Pre-work surveys will be necessary for works undertaken during breeding season (March-August) and when works are underway to ensure works are sited away from breeding birds, young and eggs until they have naturally left the nest.
- 4.6.17 The Site supports a diverse assemblage of breeding birds which is significant at a local level only. At a species level the breeding populations corn bunting is considered to be of County importance.
- 4.6.18 The scheme design should look to retain existing habitats semi-natural habitats such as the neutral grassland present within the Site. The provision of additional planting and SuDS in these areas would enhance those habitats already present. Older trees within the Site should be managed as they enter senescence as they will provide valuable foraging and nesting sites for many bird species.
- 4.6.19 Planting schemes should look to include a diverse range of native species as many passerines will use SUDS features to foraging for invertebrates when provisioning young.
- 4.6.20 The scheme should look to provide areas of rough grassland and native scrub planting, particularly along the northern boundary where the development will adjoin arable land. This will ensure suitable nesting and foraging habitat is available for species such as song thrush, yellowhammer and corn bunting.

4.7 Winter Birds

Evaluation

- 4.7.1 The Birds of Hertfordshire describe corn bunting as a restricted resident, with a population of circa 138 males; it notes that the area around Baldock and Roydon supporting the highest densities of birds during both the breeding season and during winter (Smith, Dee & Fernside, 2015). No estimate of the size of the wintering population is given.
- 4.7.2 Corn bunting in the UK are believed to be largely sedentary with a median distance of 4km moved between ringing location and recovery for 53 recoveries of dead birds. Further analysis of ringing recoveries by Donald (1997) found average distance between ringing and recovery of 2.4km for birds ringed and recovered in summer; for birds ringed in summer and recovered in winter (or vice versa) the average distance moved was 21km. Although based on a very small sample size the work by Donald supports the findings of Harper (1995) suggesting some short-distance winter dispersal followed by a return to natal areas in spring.
- 4.7.3 Given the evidence from studies suggest corn buntings are largely sedentary it seems reasonable to assume that, provided suitable wintering feeding and roosting sites are available, the Site will support the post-breeding population from 2022, possibly supplemented by birds that bred close the Site.
- 4.7.4 The conclusion of data collected during the breeding bird surveys undertaken in 2022 was that the Site support 20 singing males and 22-24 females, giving a breeding population of c40-45 birds, plus other birds breeding off-site. Corn bunting will have 1-3 broods per season, typically laying 4-5 eggs and fledging 2-3 young per attempt.

- 4.7.5 The wintering bird survey recorded two significant flocks (40 birds and 34 birds) along with an additional 39 birds. Summing these counts give a figure of 113 corn bunting present within the Site (assuming to double counting). It is considered the flock of c100 birds also recorded during the survey represents an amalgamation of the two large flocks noted, plus additional birds. On the basis of the findings of the walkover survey it is estimated that the Site has a role in supporting a wintering population of corn bunting in the region of 100-120 birds, comprising adult birds and young of the year.
- 4.7.6 As noted in the results, the feeding flocks of corn bunting recorded during the survey could not be relocated afterwards. This would suggest a high degree of mobility amongst feeding birds both within the Site and wider area. It is considered likely that corn bunting are using other areas off-site for feeding (and possibly roosting) and that flock sizes will ebb and flow as birds move within the local area. It should also be noted that male corn bunting can start defending territories from January onwards but early in the season return to the wintering flock after visiting territories. Singing males were noted at various locations around the Site during the survey.
- 4.7.7 It is concluded that the Site, in line with the findings during the breeding season, supports a wintering population of corn bunting of County importance. It is unlikely that birds recorded are entirely reliant on the habitats within the Site throughout the winter and are probably utilising other areas off-site for foraging and potentially roosting.
- 4.7.8 A total of 42 species were recorded during the wintering bird survey. Of these, four species were not recorded in the breeding bird survey: peregrine, raven, redwing and fieldfare. Both redwing and fieldfare are primarily winter visitors to lowland England and would therefore be unlikely to be present on site during the April to July period. The Birds of Hertfordshire describe peregrine as a scarce resident and raven as a scarce but increasing resident. The occasional sighting of either species at any time of the year over the Site would not be unexpected.
- 4.7.9 Of the 42 species recorded, 10 are included on the red list and 13 are included on the amber list. With the exception of the wintering thrushes (redwing and fieldfare) and common gull, all the other species are present during the breeding season.
- 4.7.10 The wintering bird survey recorded 10 grey partridge; the breeding bird survey only recorded a single pair. Grey partridge will form coveys outside the breeding season, formed of groups of adults, adults and young, or remain in pairs. The winter count would suggest up to 4 pairs have overwintered on the Site.
- 4.7.11 Yellowhammer numbers were low, similar to the breeding season suggesting a sedentary population within the site.
- 4.7.12 Wintering skylark numbers were higher than those recorded during the breeding season. The wintering birds on site are likely to comprise a mix of local birds and immigrants from northern England/Scotland and possibly Continental Europe. The number of linnet recorded on site were higher than counts during the breeding season surveys. This is not surprising as linnet tend to form large foraging flocks during the autumn/winter period.
- 4.7.13 Numbers of meadow pipit recorded during the winter bird survey were lower than those noted in the breeding season suggesting the site does not provide suitable over-wintering habitat for this

species. Numbers of other species such as greenfinch, song thrush, wren and dunnock noted in the wintering bird survey were considered to be comparable to those recorded during the breeding season.

- 4.7.14 Table 3.4 provides a comparison between the breeding and wintering populations of key species on Site. Note the number in parenthesis in the 2022 breeding territories column is an estimate of the total breeding population based on territories recorded.

Conclusion

- 4.7.15 The 2023 wintering bird survey has demonstrated that the Site continues to support corn bunting throughout the year and the wintering population is of county importance. Without appropriate mitigation the proposed development of the Site will adversely affect the wintering population of corn bunting at a county level.
- 4.7.16 The Site also supports wintering populations of other bird species of conservation concern such as skylark, yellowhammer and grey partridge that also breed on Site. Mitigation proposals should include measures to provide suitable over wintering habitat for these species.
- 4.7.17 Corn bunting will be feeding on seeds and plant material during the winter period. The loss of fields sown with cereals or over-wintered as stubbles will significantly reduce the foraging resources available to this species. These losses may be partially off-set through the provision of strips of seed-rich wild bird mixes close to hedgerows which would help mitigate the loss of agricultural land. Seed mixes such as Boston Seeds (CSS10/FCB Wild Bird Food Mixture) would be suitable for mitigation areas. Mixes such as this comprise largely annual species and reseeding each year would be required to provide suitable foraging on an annual basis. Other options such as Kingcrops RSPB Corn bunting mix may be an alternative, this mix also provides suitable nesting habitat and may be a more viable long-term solution.
- 4.7.18 On-site mitigation measures are unlikely to be able to fully mitigate the loss of extensive areas of arable land within the Site. As well as on-site mitigation measures, off-site habitat enhancement is also likely to be required. Given the sedentary nature of corn buntings such measures should look to identify suitable areas close to the Site to maintain the local population. Ringing data would suggest that mitigation areas within c5km of the Site are sufficiently close to be reached by corn buntings as reported in BMD.21.0045.RPE-TN.810.A
- 4.7.19 There is little published research on the specific factors driving the decline in corn bunting numbers but factors such as reduced availability of seeds over winter, lack of invertebrate prey during summer and changes in crop types and harvesting patterns have all been identified as possible factors. Mitigation measures that provide areas of seed-bearing plants over the winter months are likely to be beneficial to wintering corn bunting. Offsite mitigation measures are described in further detail in BMD.21.0045.RPE-TN.810.A
- 4.7.20 The Site also supports wintering populations of a number of other scarce farmland birds. The mitigation measures set out for corn bunting should also benefit many of these species.

4.8 Reptiles

- 4.8.1 Two species of reptile have been recorded at the Site during the reptile survey conducted between May and July 2022. The species were common lizard and slow worm.
- 4.8.2 The overall Site result for common lizard (a maximum count of 24 adults during a single visit) indicates a 'low' population.
- 4.8.3 The overall score for slow worm (a maximum count of 18 adults observed during one visit) indicates a 'low' population.
- 4.8.4 No other species of reptile were recorded during the survey.
- 4.8.5 Transect 4-8 within Clothall Common and transects 10 and 11 within the south west of the Site (see Plan Ref BMD.21.0045.DRE.905 for transect locations) within grassland areas were where all reptiles were recorded.
- 4.8.6 Generally large areas of the Application Site were considered sub-optimal for reptile being either too open (e.g. the arable field parcels) or lacking optimal reptile habitat. As such, the reptile results indicate a scattered distribution of reptiles associated with optimal habitat areas on the margins of larger habitat blocks (e.g. rough grassland areas on field margins) along with the population of common lizards on Clothall Common.
- 4.8.7 To ensure compliance with the Wildlife and Countryside Act 1981 (As Amended), reptile mitigation strategies will be developed in detail for the proposed scheme and presented in a construction and environmental management plan. In line with HGBI (2016) guidance, the aims of the mitigation strategies will be to:
- Protect reptiles from any harm that might arise during the construction of the Scheme;
 - Ensure that sufficient quality, quantity and connectivity of habitat is provided to accommodate the existing reptile population during construction and once completed; and
 - Ensure no net loss of local reptile conservation status.

4.9 Other Species – Incidental Observations

- 4.9.1 A number of other species were identified incidentally within the Application Site.
- 4.9.2 S41 butterflies (small blue) were identified utilising the rough grassland to the east of Clothall Common residential block. It is understood that the habitats in which the butterflies are present as well as other notable invertebrates were recorded will be retained and enhanced within the proposals.
- 4.9.3 A single lizard orchid was identified during a breeding bird survey within the rough grassland to the east of Clothall Common residential block. As an extremely rare orchid listed under Schedule 8 of the Wildlife and Countryside Act 1981 (as amended), consultation with Natural England would be required if works are to occur within this area. Presently the plant is situated within an area to be retained and enhanced.

- 4.9.4 A number of common, notable and protected bird species were identified incidentally utilising the Site during the numerous survey visits. This includes robin, collared dove, great tit, goldfinch, chaffinch, wood pigeon, blackbird, magpie, carrion crow, jay, wren, goldcrest, long tailed tit, coal tit, red kite, and buzzard. Mammals such as red fox, deer and rabbit were also recorded on Site during the survey visits.

5. RECOMMENDATIONS

- 5.1.1 The presence of protected and notable species has been confirmed on Site and as such the following mitigation and compensation/enhancement requirements have been identified:
- 5.1.2 **Reptiles:** the proposed development areas avoid elevated areas for reptiles and thus through the mitigation hierarchy impacts will be minimised. Consequently, main method will be habitat manipulation/displacement. Specific habitat creation/enhancement works for reptiles would include scrub management, creation of log and stone piles and provision for grass heaps (for grass snake & slow worm). In other areas of the Site where there is some suitable habitat for reptile.
- 5.1.3 Reptiles should be safeguarded to ensure wildlife legislation (notably the Wildlife and Countryside Act 1981 as amended) is not breached.
- 5.1.4 Mitigation should be implemented to protect reptiles from harm during site clearance and construction works and to ensure that sufficient quality, quantity and connectivity of habitat is provided to accommodate reptiles on the Site with no net loss of the local reptile conservation status.
- 5.1.5 High risk areas for reptiles include scrub and grassland mosaics such as Clotham Common and the peripheries of the Site which are proposed to be retained.
- 5.1.6 Mitigation measures in relation to loss of habitat areas known to support reptiles will include:
- Risk area mapping: As part of the assignment of risk areas, reptile risk areas will also be taken into consideration to ensure the appropriate level of mitigation is implemented as set out below.
 - The following works to be undertaken during the reptile active period – March to October inclusive.
- 5.1.7 At present, displacement works is considered to be the most appropriate method given the retention of large areas of habitat that reptiles can be moved into and the areas of suitable habitat which are proposed to be retained. These areas would be subject to enhancements including scrub/grass management and creation of log piles and hibernacula features.
- 5.1.8 Where only small areas of habitat on the periphery of retained core habitat areas are being affected, mitigation works will include displacement of reptiles from work areas into adjacent retained habitats through gradual reduction of vegetation in a phased/directional manner.
- 5.1.9 This approach also relates to low risk areas. Such works would be conducted during the reptile active period (March to October inclusive). The works are described in detail below and will include directional clearance of vegetation and phased height reduction which will encourage displacement of reptiles (and other species) toward retained habitat features. Such works would be planned and overseen by the Ecological Clerk of Works.
- 5.1.10 Reptile Trapping and Translocation works if required would include:

- The high-risk areas will be fenced with reptile exclusion fencing and subject to a period of trapping; total trapping days to be informed by trapping progress, with minimum trapping days set for each area (based on areas size and known population sizes). This will include intensive hand capture effort and gradual reduction of areas, through use of habitat manipulation methods to concentrate reptiles into smaller and smaller areas of suitable habitat within each trapping area. This will be followed by hand searching and then supervised site stripping with caught reptiles relocated to designated and enhanced receptor areas.
- The receptor areas will be within the Site boundaries and as such reptiles will be relocated within the Site rather than translocated to distant receptor sites.
- The receptor areas will be the nearest retained reptile habitat area and will be enhanced with additional features ahead of receiving relocated reptiles.
- Receptor areas would be clearly defined on Site and would be in areas that would not be subject to any disturbance works (other than low level management and maintenance works associated with landscape improvements and works that could be carried out under the method of temporary displacement if required).

- 5.1.11 The Ecological Clerk of Works will review each proposed works area with the Biodiversity Champion with regard to risk to reptile species and will apply the most appropriate approach with regard to the level of mitigation required. This would need to consider the site clearance programme, seasonal timing constraints and also the time required to clear areas of reptiles if trapping is required.
- 5.1.12 **Bats:** No confirmed roosts have been identified, therefore. no specific mitigation is required at this stage in relation to bat roosts.
- 5.1.13 Retention of boundary hedgerows and treelines supplemented with new planting will continue to provide bat foraging and commuting corridors. Retention of dark corridors throughout Site e.g. hedgerows/Royston Road that are utilised by the bat species onsite. Enhancements of the low-quality woodland patch, herb - rich grassland alongside scrub management including targeted planting for increasing nocturnal insect biomass would also benefit bats with regard to new and enhanced foraging areas. Installation of SUDS will also provide additional foraging opportunities for bats. Bat box installation at the Site would also provide roosting features in an area that lacks a range of roost types. Light levels should be kept to the minimum required for safety and follow best practice for lighting in relation to bats and other nocturnal fauna (BCT and ILP, 2023).
- 5.1.14 **Badgers:** not confirmed as present on Site, however three former outlier setts were recorded which were determined inactive at the time of the survey. No direct impacts on these setts are anticipated but works near to disused badger setts may be required. Any works in close proximity would need appropriate mitigation or licence depending on the extent and duration of the works.
- 5.1.15 **Notable butterflies:** one S41 species (small blue) is confirmed to be using the south-east grassland fields of the Site. Best practice should be followed to minimise impacts to the conservation status of these species. Opportunity should also be taken to increase suitable habitat such as the rough grassland post development through specific habitat creation schemes

as recommended by Butterfly Conservation. It is understood that the habitats where small blue was recorded is due to be retained and enhanced.

- 5.1.16 **Breeding birds:** pre-work surveys will be necessary for works undertaken during breeding season (March-August) and when works are underway to ensure works are sited away from breeding birds, young and eggs until they have naturally left the nest.
- 5.1.17 Further mitigation for the loss of some of the corn bunting territories present in the arable fields through the provision of areas of rough calcareous grassland with scattered trees and scrub within the final scheme design.
- 5.1.18 As well as on-site mitigation measures, off-site habitat enhancement will also be delivered. Given the sedentary nature of corn buntings such measures should look to identify suitable areas close to the Site to maintain the local population. Ringing data would suggest that mitigation areas within c5km of the Site are sufficiently close to be reached by corn buntings.
- 5.1.19 **General habitat enhancement** opportunities are detailed in the ecological assessment report (BMD.21.0045.RPE/P1.801.A.-.Ecology).

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7. GLOSSARY

7.1 Scientific Terms and Acronyms

Badger sett An underground complex of tunnels utilised by badger as a den and accessed by one or more entrances at ground surface level

BoCC Birds of Conservation Concern, the UK Red-list for birds, produced by the British Trust for Ornithology and last updated in December 2021.

BTO British Trust for Ornithology

CBC Common Bird Census

CIEEM Chartered Institute of Ecology and Environmental Management; the professional organisation and provider of professional codes of conduct for ecological consultancy.

Defunct hedgerow A hedgerow which is not stock proof without the need for fencing.

EPS European Protected Species For the purposes of this report EPS are species that require particular licences to allow certain works to go ahead. Species falling within the following situations are not considered as EPS within this report:

- Birds listed on Appendix 2 of the Bern Convention (European legislation). The protection requirements of this Appendix are fully integrated in UK law, notably through the Wildlife and Countryside Act 1981 (as amended).
- Birds listed on Annex 1 of the Birds Directive (European legislation). The protection of such species survival and reproduction within their geographic distribution is ensured through special conservation measures in relation to their habitats. Such measures are implemented through the establishment of Special Protection Areas. Therefore, any implications are considered at regional habitat and country level rather than individual bird/species level.

HERC Hertfordshire Environmental Record Centre.

Important Hedgerow Any hedgerow which has existed for 30 years or more and satisfies a number of criteria listed within Part II of Schedule 1 to the Hedgerow Regulations 1997. For the purposes of this report, only wildlife and landscape criteria are considered; archaeological and historical criteria are not assessed.

Intact hedgerow A hedgerow which is stock proof with the need for fencing.

LBAP Local Biodiversity Action Plan.

Level of protection – ‘EU’ Protected under the Conservation of Habitats and Species Regulations (2017).

Level of protection – ‘UK’ Protected under the Wildlife and Countryside Act 1981 (as amended).

NIA Nature Improvement Areas.

Non-native invasive species For the purposes of this report: species listed on Schedule 9 of the wildlife and Countryside Act 1981 (as amended).

Notable species A species which is listed as a UK Priority Species, carries an unfavourable conservation status (e.g. scarce, rare, threatened, Red-listed), is invasive or is otherwise worthy of note from an ecological perspective.

Protected species A species protected under specific UK or European legislation, including Habitats Directive, Wildlife and Countryside Act.

SSSI Site of Species Scientific Interest. Statutory designation of biological or geological importance

UK Priority Habitat and species A habitat or species identified as a priority for conservation in accordance with Section 41 of the Natural Environment and Rural Communities Act (2006). Section 40 of the Act places a duty on public authorities to have regard for the conservation objectives of these habitats and species. (Also known as Section 41 (S41) habitats/species).

7.2 Bird Specific Terminology and Terms

BoCC Red list

- 7.2.1 Species that are globally threatened (Critically endangered, endangered and vulnerable but not near threatened) using IUCN guidelines, as assessed by Birdlife International in 2021.
- 7.2.2 Historic decline: Historic decline in breeding populations. Species judged to have declined severely between 1800 and 1995 from an assessment conducted by Gibbens *et al.* (1996) and which have not recovered subsequently.
- 7.2.3 Breeding population decline: Severe decline in UK breeding population size, either a decline of over 50% over 25 years or the longer-term defined as the period since the first BoCC review (1969).
- 7.2.4 Non-breeding population decline: Severe decline in UK non-breeding population of over 50% over a 25-year period or over a longer-term defined as the period since the first BoCC review (1969). Non-breeding trends were only assessed if a species has substantially independent breeding and non-breeding populations, otherwise only breeding populations were assessed.
- 7.2.5 Breeding range decline: Species that have experienced a severe decline in the UK range between the breeding bird atlases in 1988-1991 and 2007-2011 or 1968-1971 and 2007-2011 as measured by the calculated change in the number of occupied 10 km squares.
- 7.2.6 Non-breeding range decline: Severe decline in UK range (more than 50%) between the wintering bird atlases in 1981-1984 and 2007-2011 as measured by the calculated change in the number of occupied 10 km squares.

BoCC Amber list

- 7.2.7 The European Red List of Birds (ERLoB) was published in 2021 by Birdlife International. It covers IUCN Red list assessments of regional extinction risk with no consideration of the wider suite of measures (species rarity, localization, moderate decline and depletion) included in SPEC assessments. Any species on the European Red list (Critically endangered, endangered, vulnerable) is included on the Amber list.
- 7.2.8 Historic decline – recovery: Species Red listed for historic decline in a previous review but with a substantial recent recovery (at least 100% in the last 25 years or the longer-term period). Longer-term is defined as the period since the first BoCC review (1969).
- 7.2.9 Breeding population decline: Species experiencing a moderate decline in UK breeding population (more than 25% but less than 50%) over 25 years of the longer-term period. Longer-term is defined as the period since the first BoCC review (1969).
- 7.2.10 Non-breeding population decline: Moderate decline in UK non-breeding populations (more than 25% but less than 50%) over a 25-year period or over longer-term defined as the period since the first BoCC review (1969). Non-breeding trends were only assessed if a species has substantially independent breeding and non-breeding populations, otherwise only breeding population was assessed.
- 7.2.11 Breeding range decline: Species that have experienced a moderate decline (more than 25% but less than 50%) in the UK range between the breeding bird atlases in 1988-1991 and 2007-2011 or 1968-1971 and 2007-2011 as measured by the calculated change in the number of occupied 10 km squares.
- 7.2.12 Non-breeding range decline: Moderate decline in UK range (more than 25% but less than 50%) between the wintering bird atlases in 1981-1984 and 2007-2011 as measured by the calculated change in the number of occupied 10 km squares.
- 7.2.13 Breeding and non-breeding rarity: Species with a UK breeding population of fewer than 300 pairs or with a UK non-breeding population of less than 900 individuals.
- 7.2.14 Breeding and non-breeding localization: Localized breeding or non-breeding population with at least 50% of UK population found in 10 or fewer sites. Sites were defined as either Special Protection Areas or Important Bird Areas. Rare breeding and non-breeding species were not assessed against this criterion as the small population size predisposes them to be restricted to a small number of sites.
- 7.2.15 Breeding or wintering population of International importance: Species with at least 20% of European breeding or non-breeding population found in the UK.

7.3 Scientific Names

- 7.3.1 Scientific names of species mentioned in this report are outlined in Table 7.1.

Table 7.1 Scientific names of species mentioned within this report

English Name	Scientific Name
Mammals	
Badger	<i>Meles meles</i>
Bank vole	<i>Myodes glareolus</i>
Barbastelle	<i>Barbastella barbastellus</i>
Brown long-eared	<i>Plecotus auritus</i>
Common pipistrelle	<i>Pipistrellus pipistrellus</i>
Common shrew	<i>Sorex araneus</i>
European rabbit	<i>Oryctolagus cuniculus</i>
Field vole	<i>Microtus agrestis</i>
Lesser noctule	<i>Nyctalus leisleri</i>
Myotis bat species	<i>Myotis</i> sp.
Noctule bat	<i>Nyctalus noctula</i>
Nyctalus bat species	<i>Nyctalus</i> sp.
Plecotus bat species	<i>Plecotus</i> sp.
Red fox	<i>Vulpes vulpes</i>
Serotine	<i>Eptesicus serotinus</i>
Soprano pipistrelle	<i>Pipistrellus pygmaeus</i>
Wood mouse	<i>Apodemus sylvaticus</i>
Birds	
Blackbird	<i>Turdus merula</i>
Buzzard	<i>Buteo buteo</i>
Carrion crow	<i>Corvus corone</i>
Chaffinch	<i>Fringilla coelebs</i>
Coal tit	<i>Parus ater</i>
Collared dove	<i>Streptopelia decaocto</i>
Common whitethroat	<i>Sylvia communis</i>
Com bunting	<i>Emberiza calandra</i>
Dunnock	<i>Prunella modularis</i>
European jay	<i>Garrulus glandarius</i>
Fieldfare	<i>Turdus pilaris</i>
Goldcrest	<i>Regulus regulus</i>
Goldfinch	<i>Carduelis carduelis</i>
Great tit	<i>Parus major</i>
Greenfinch	<i>Chloris chloris</i>
Grey partridge	<i>Perdix perdix</i>
House sparrow	<i>Passer domesticus</i>
Linnet	<i>Linaria cannabina</i>
Long-tailed tit	<i>Aegithalos caudatus</i>
Magpie	<i>Pica pica</i>
Meadow pipit	<i>Anthus pratensis</i>
Peregrine	<i>Falco peregrinus</i>
Raven	<i>Corvus corax</i>
Red kite	<i>Milvus milvus</i>
Redwing	<i>Turdus iliacus</i>
Reed bunting	<i>Emberiza schoeniclus</i>
Robin	<i>Erithacus rubecula</i>
Skylark	<i>Alauda arvensis</i>
Song thrush	<i>Turdus philomelos</i>
Starling	<i>Sturnus vulgaris</i>
Swift	<i>Apus apus</i>
Woodpigeon	<i>Columba palumbus</i>
Wren	<i>Troglodytes troglodytes</i>
Yellow wagtail	<i>Motacilla flava</i>
Yellowhammer	<i>Emberiza citrinella</i>

Plants	
Ash	<i>Fraxinus excelsior</i>
Common nettle	<i>Urtica dioica</i>
Common spotted orchid	<i>Dactylorhiza fuchsii</i>
Field maple	<i>Acer campestre</i>
Greater knapweed	<i>Centaurea scabiosa</i>
Ivy	<i>Hedera helix</i>
Lady's bedstraw	<i>Galium verum</i>
Lizard orchid	<i>Himantoglossum hircinum</i>
Mugwort	<i>Artemisia vulgaris</i>
Pyramidal orchid	<i>Anacamptis pyramidalis</i>
Reptiles & Amphibians	
Adder	<i>Vipera berus</i>
Common lizard	<i>Zootoca vivipara</i>
Common toad	<i>Bufo bufo</i>
Grass snake	<i>Natrix helvetica</i>
Great crested newt	<i>Triturus cristatus</i>
Slow worm	<i>Anguis Fragilis</i>
Smooth newt	<i>Lissotriton vulgaris</i>
Invertebrates	
Marbled white	<i>Melanargia galathea</i>
Sandrunner shieldbug	<i>Sciocoris cursitans</i>
Six-spot burnet	<i>Zygaena filipendulae</i>
Small blue	<i>Cupido minimus</i>
Weevil sp.	<i>Curculionoidea</i>

APPENDICES

A. PLANS

HABITATS AND BOTANICAL INTEREST

Drawing BMD.21.0045.DRE.901: Phase 1 Habitat Survey

Drawing BMD.21.0045.DRE.908: Ecological Constraints

SITE LOCATION

Drawing BMD.21.0045.DRE.902: Site Location

BIRDS

Drawing BMD.21.0045.DRE.903: Corn bunting survey transects

Drawing BMD.21.0045.DRE.906: Breeding bird survey

BATS

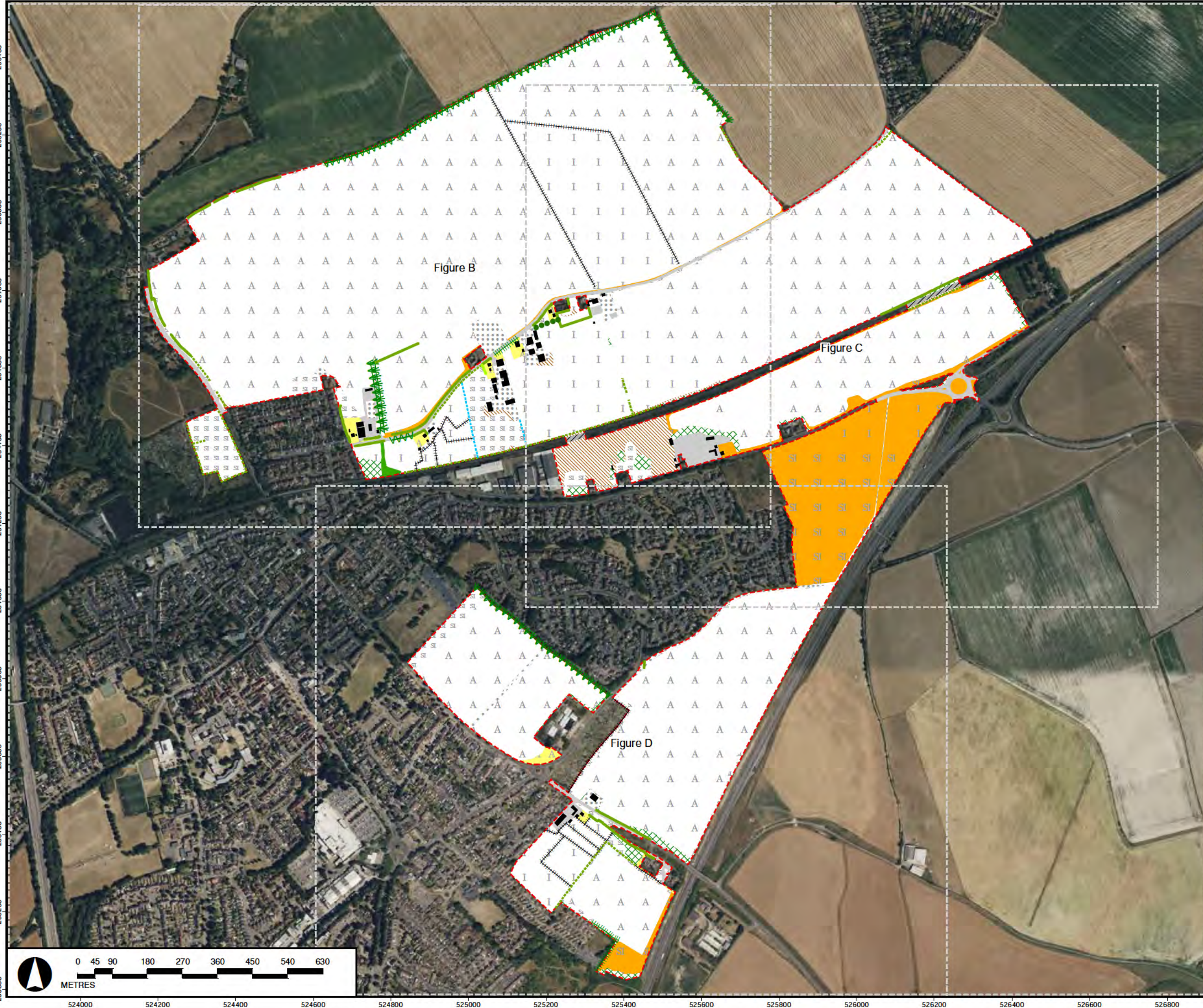
Drawing BMD.21.0045.DRE.904: Bat Activity Transects

Drawing BMD.21.0045.DRE.907: Bat Activity Results

Drawing BMD.21.0045.DRE.909: Baldock Buildings

REPTILES

Drawing BMD.21.0045.DRE.905: Reptile Survey Plan



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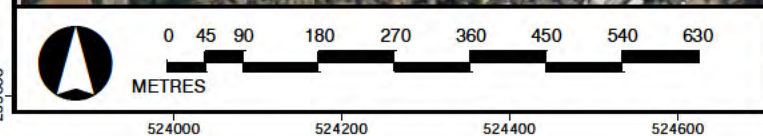
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 Application boundary

Pre-development Habitats

	A1.1.1 - Broadleaved woodland - semi-natural
	A2.1 - Scrub - dense/continuous
	B2.2 - Neutral grassland - semi-improved
	B4 - Improved grassland
	B6 - Poor semi-improved grassland
	C3.1 - Other tall herb and fern - ruderal
	J1.1 - Cultivated/disturbed land - arable
	J1.2 - Cultivated/disturbed land - amenity grassland
	J3.6 - Buildings
	J4 - Bare ground
	J5 - Other habitat - road
	J5 - Other habitat - railway
	J2.1.1 - Intact hedge - native species-rich
	J2.1.2 - Intact hedge - species-poor
	J2.2.1 - Defunct hedge - native species-rich
	J2.2.2 - Defunct hedge - species-poor
	J2.3.1 - Hedge with trees - native species-rich
	J2.3.2 - Hedge with trees - species-poor
	Line of trees
	Non-native and ornamental hedgerow
	J2.4 - Fence
	J2.6 - Dry ditch
	Target note

Rev	Description	
Purpose of Issue		
INFORMATION		
Bradley Murphy Design Ltd Studio 3, Floor 18 Alpha Studios Alpha Tower Sutton St Queensway Birmingham B1 1TT t: 0121 615 9127 e: info@bradleymurphydesign.co.uk www.bradleymurphydesign.co.uk		BMD
Client		
URBAN & CIVIC		
Project		
BALDOCK		
Drawing Title		
A : PHASE 1 HABITAT SURVEY		
Drawn	Checked	Approved
MP	LT	JP
Job No.	Scale	Sheet Size
21.0045	1:9,000	A3
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BMD.21.0045.DRE.901A		
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- Application boundary
- Pre-development Habitats
- A1.1.1 - Broadleaved woodland - semi-natural
 - A2.1 - Scrub - dense/continuous
 - B2.2 - Neutral grassland - semi-improved
 - B4 - Improved grassland
 - B6 - Poor semi-improved grassland
 - C3.1 - Other tall herb and fern - ruderal
 - J1.1 - Cultivated/disturbed land - arable
 - J1.2 - Cultivated/disturbed land - amenity grassland
 - J3.6 - Buildings
 - J4 - Bare ground
 - J5 - Other habitat - road
 - J5 - Other habitat - railway
 - J2.1.1 - Intact hedge - native species-rich
 - J2.1.2 - Intact hedge - species-poor
 - J2.2.1 - Defunct hedge - native species-rich
 - J2.2.2 - Defunct hedge - species-poor
 - J2.3.1 - Hedge with trees - native species-rich
 - J2.3.2 - Hedge with trees - species-poor
 - Line of trees
 - Non-native and ornamental hedgerow
 - J2.4 - Fence
 - J2.6 - Dry ditch
 - Scattered tree - very large
 - Scattered tree - large
 - Scattered tree - medium
 - Scattered tree - small
 - Scattered scrub
 - Target note

Rev	Description	
-	-	-

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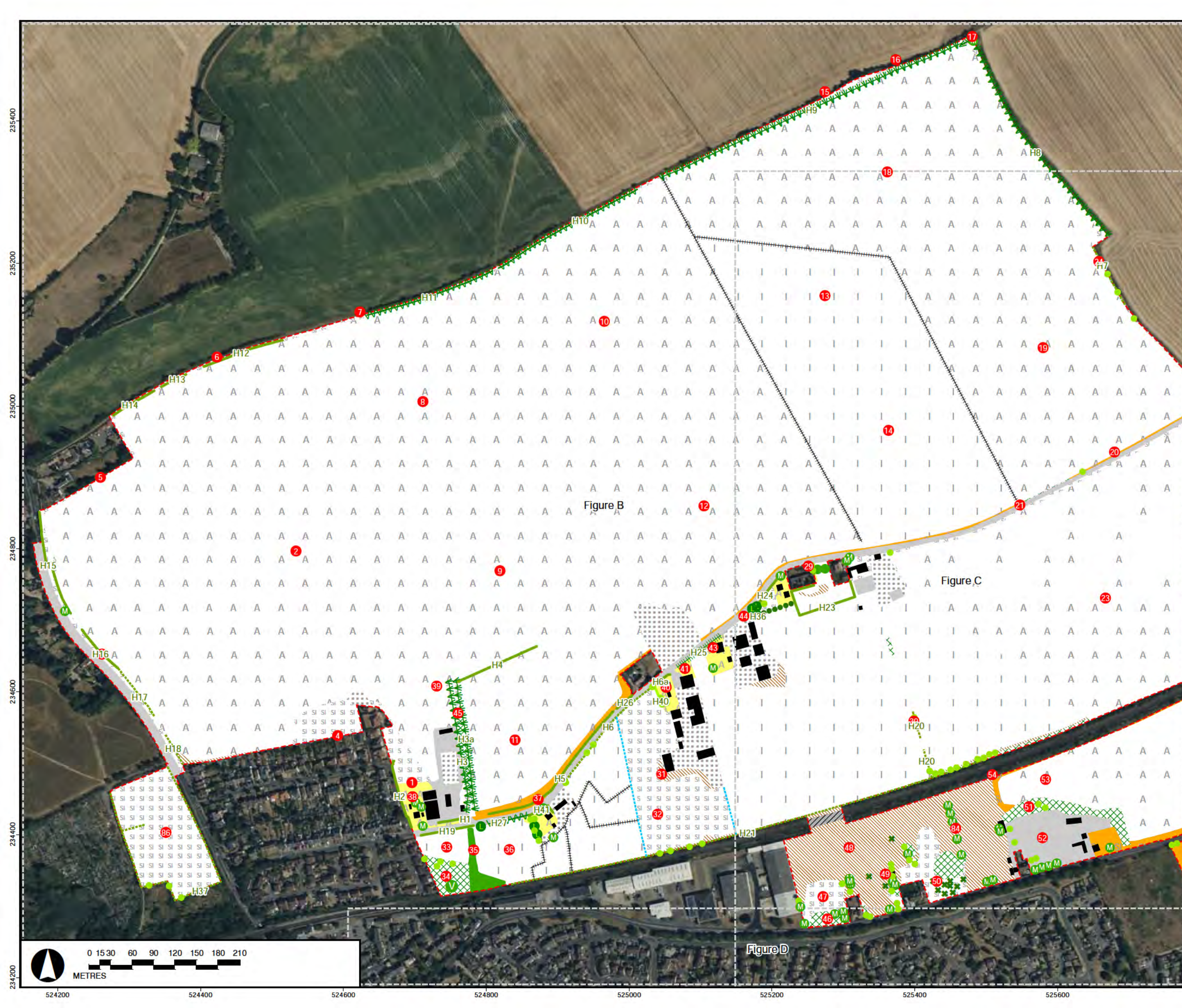
Project
BALDOCK

Drawing Title
B : PHASE 1 HABITAT SURVEY

Drawn MP	Checked LT	Approved JP	Date 17/09/25
Job No. 21.0045	Scale 1:4,750	Sheet Size A3	Revision

Drawing Number
BMD.21.0045.DRE.901B

D



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- Application boundary
- Pre-development Habitats
- A1.1.1 - Broadleaved woodland - semi-natural
 - A2.1 - Scrub - dense/continuous
 - B2.2 - Neutral grassland - semi-improved
 - B4 - Improved grassland
 - B6 - Poor semi-improved grassland
 - C3.1 - Other tall herb and fern - ruderal
 - J1.1 - Cultivated/disturbed land - arable
 - J1.2 - Cultivated/disturbed land - amenity grassland
 - J3.6 - Buildings
 - J4 - Bare ground
 - J5 - Other habitat - road
 - J5 - Other habitat - railway
 - J2.1.1 - Intact hedge - native species-rich
 - J2.1.2 - Intact hedge - species-poor
 - J2.2.1 - Defunct hedge - native species-rich
 - J2.2.2 - Defunct hedge - species-poor
 - J2.3.1 - Hedge with trees - native species-rich
 - J2.3.2 - Hedge with trees - species-poor
 - Line of trees
 - Non-native and ornamental hedgerow
 - J2.4 - Fence
 - J2.6 - Dry ditch
 - Scattered tree - very large
 - Scattered tree - large
 - Scattered tree - medium
 - Scattered tree - small
 - Scattered scrub
 - Target note

Rev	Description	
-	-	-

Purpose of Issue

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Client

URBAN & CIVIC

Project

BALDOCK

Drawing Title

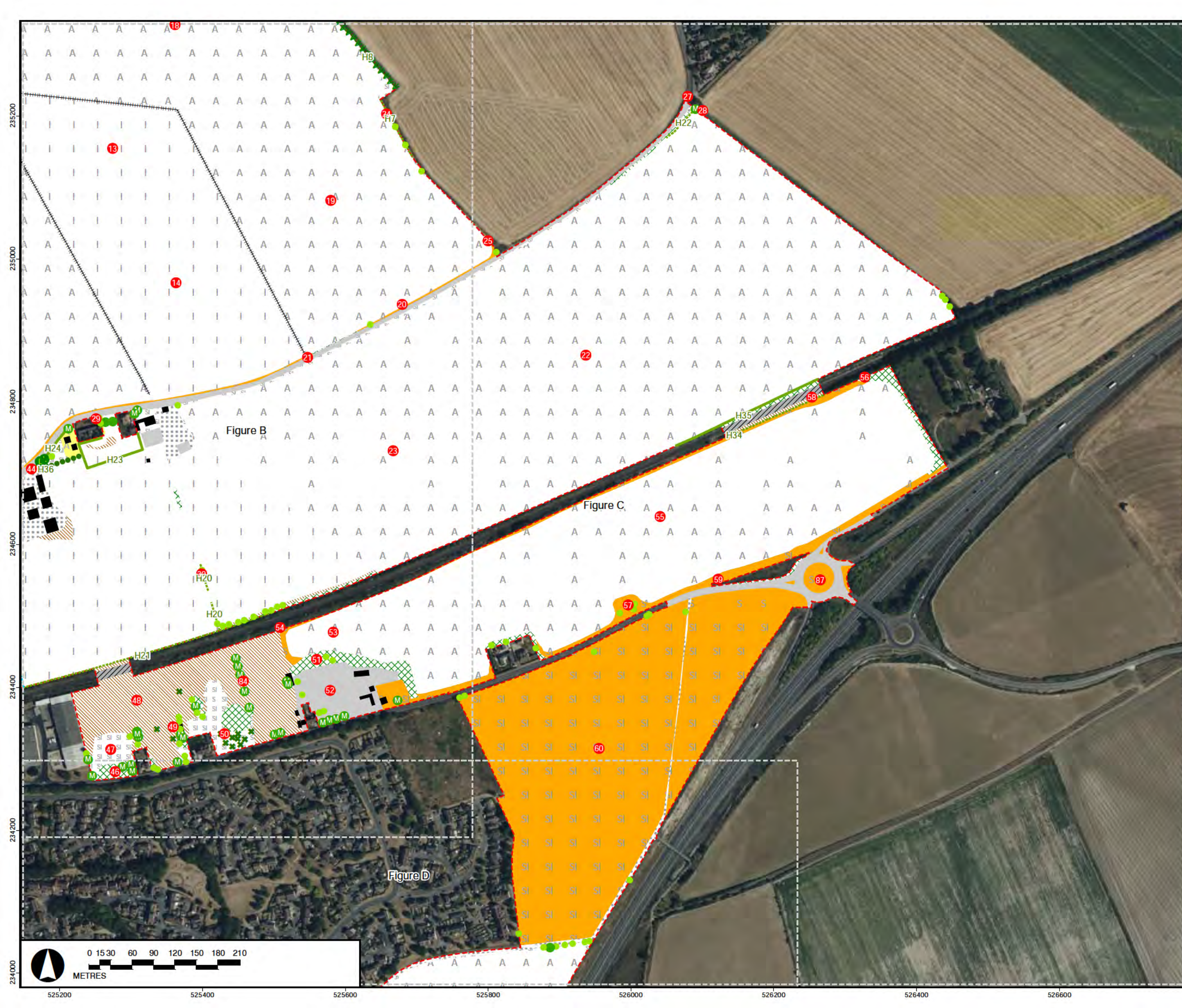
C : PHASE 1 HABITAT SURVEY

Drawn MP	Checked LT	Approved JP	Date 17/09/25
Job No. 21.0045	Scale 1:4,750	Sheet Size A3	Revision

Drawing Number

BMD.21.0045.DRE.901C

D



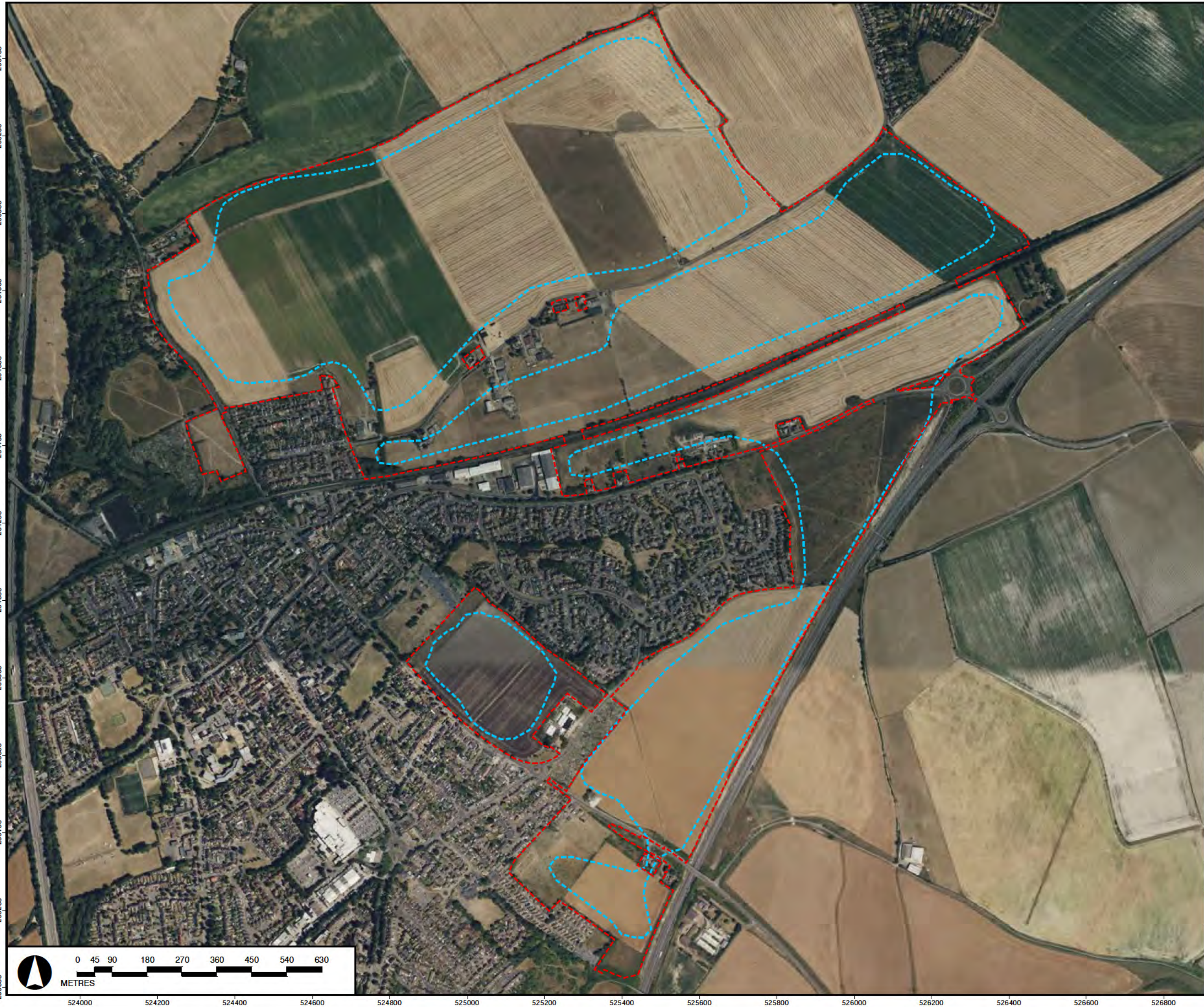


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Client			
URBAN & CIVIC			
Project			
BALDOCK			
Drawing Title			
SITE LOCATION			
Drawn	Checked	Approved	Date
MP	LMB	JP	18/09/25
Job No.	Scale	Sheet Size	Revision
21.0045	1:9,000	A3	B
Drawing Number			
BMD.21.0045.DRE.902			

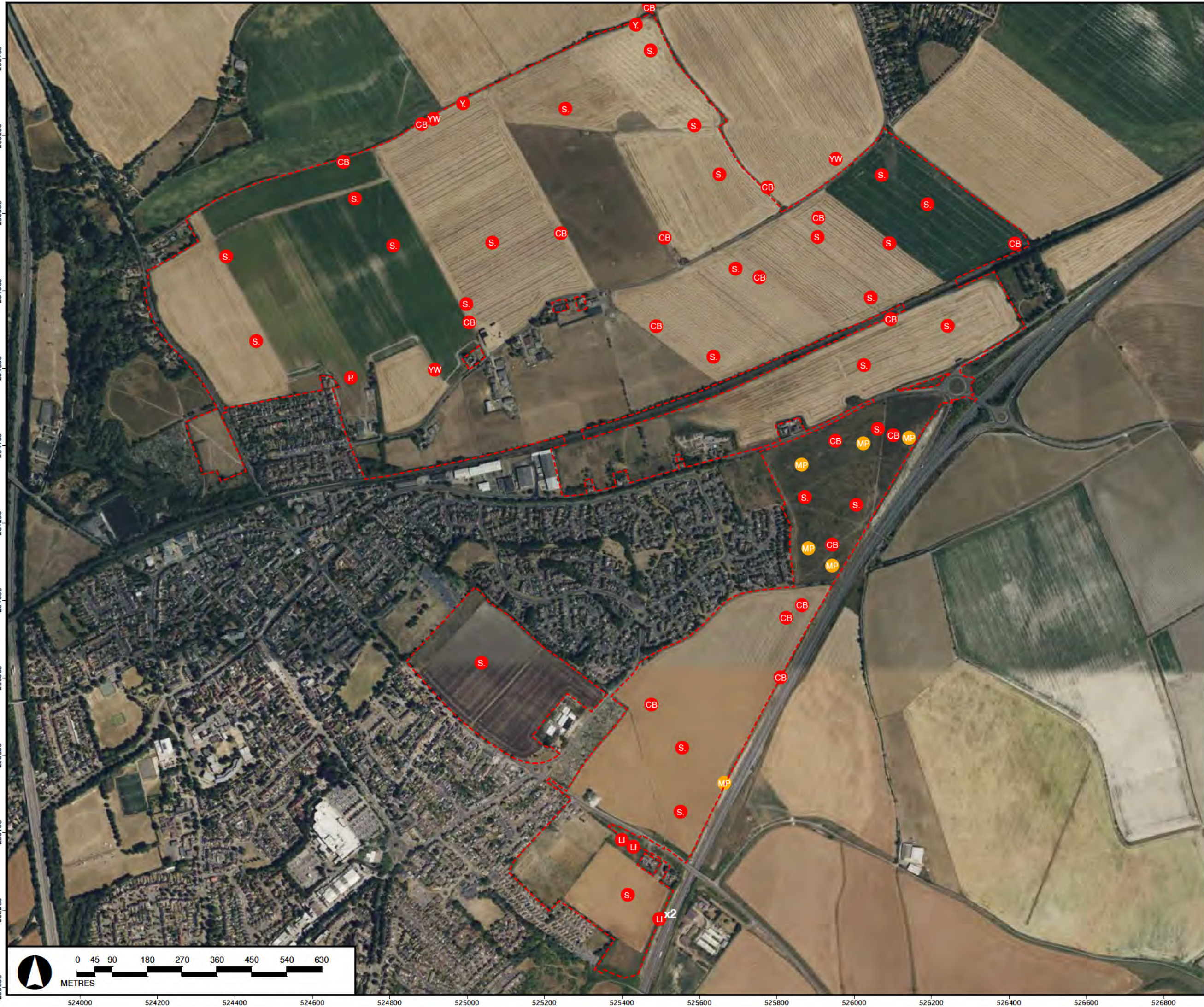


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- Application boundary
- Transect - corn bunting and breeding birds

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Client		
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Project		
BALDOCK		
Drawing Title		
CORN BUNTING/BREEDING		BIRD
TRANSECTS		
Drawn	Checked	Approved
MP	LMB	JP
Job No.	Scale	Sheet Size
21.0045	1:9,000	A3
Drawing Number		B
BMD.21.0045.DRE.903		



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Application boundary

Breeding bird survey - results

Red

Amber

BTO species codes:

CB - Corn bunting
LI - Linnet
MP - Meadow pipit
P - Grey partridge
S - Skylark
Y - Yellowhammer
YW - Yellow Wagtail

-	-	-
Rev	Description	-

Purpose of Issue

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BMD

Client

URBAN & CIVIC

Project

BALDOCK

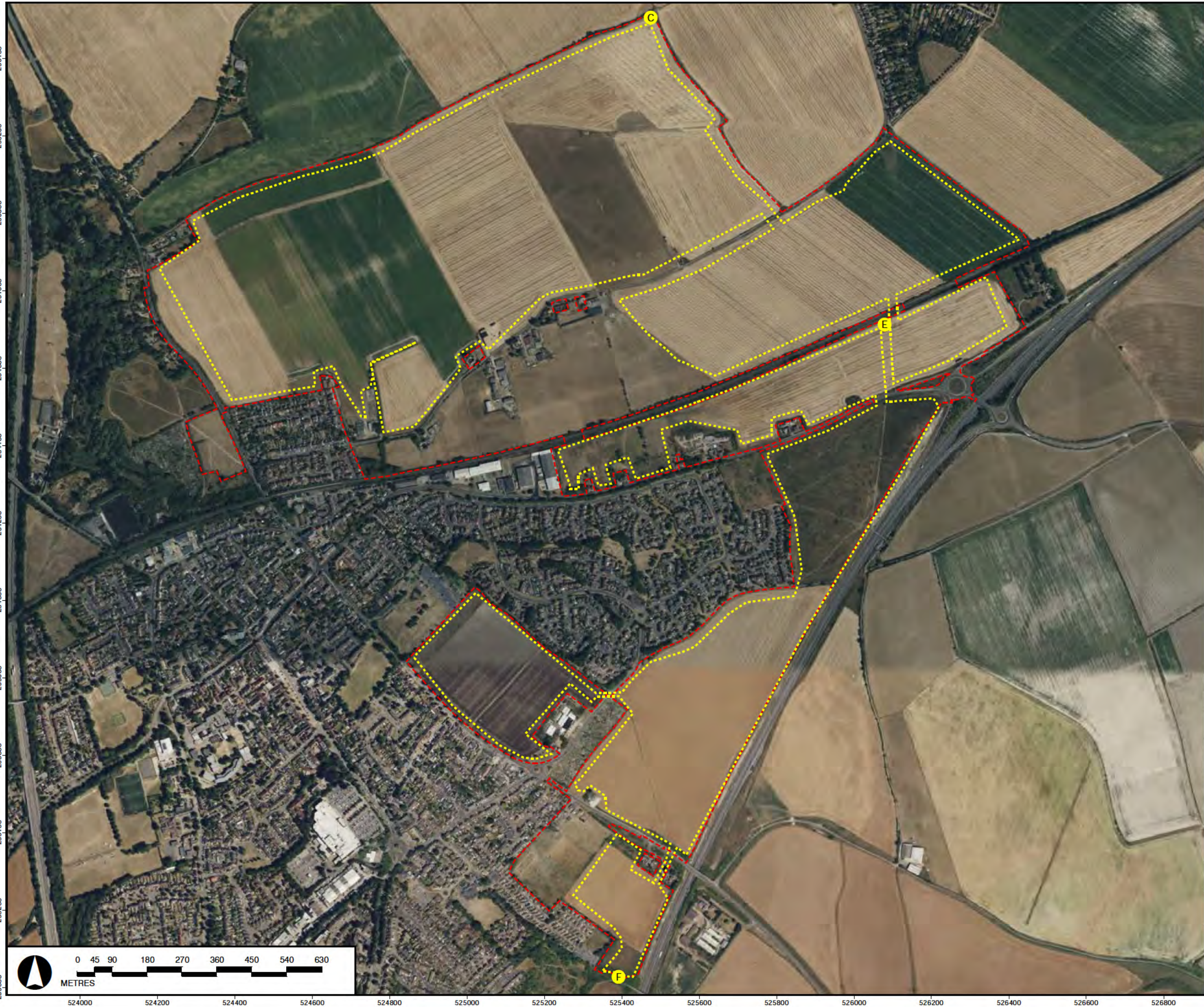
Drawing Title

BREEDING BIRD SURVEY

Drawn	Checked	Approved	Date
MP	LMB	JP	18/09/25
Job No.	Scale	Sheet Size	Revision
21.0045	1:9,000	A3	B

Drawing Number

BMD.21.0045.DRE.906



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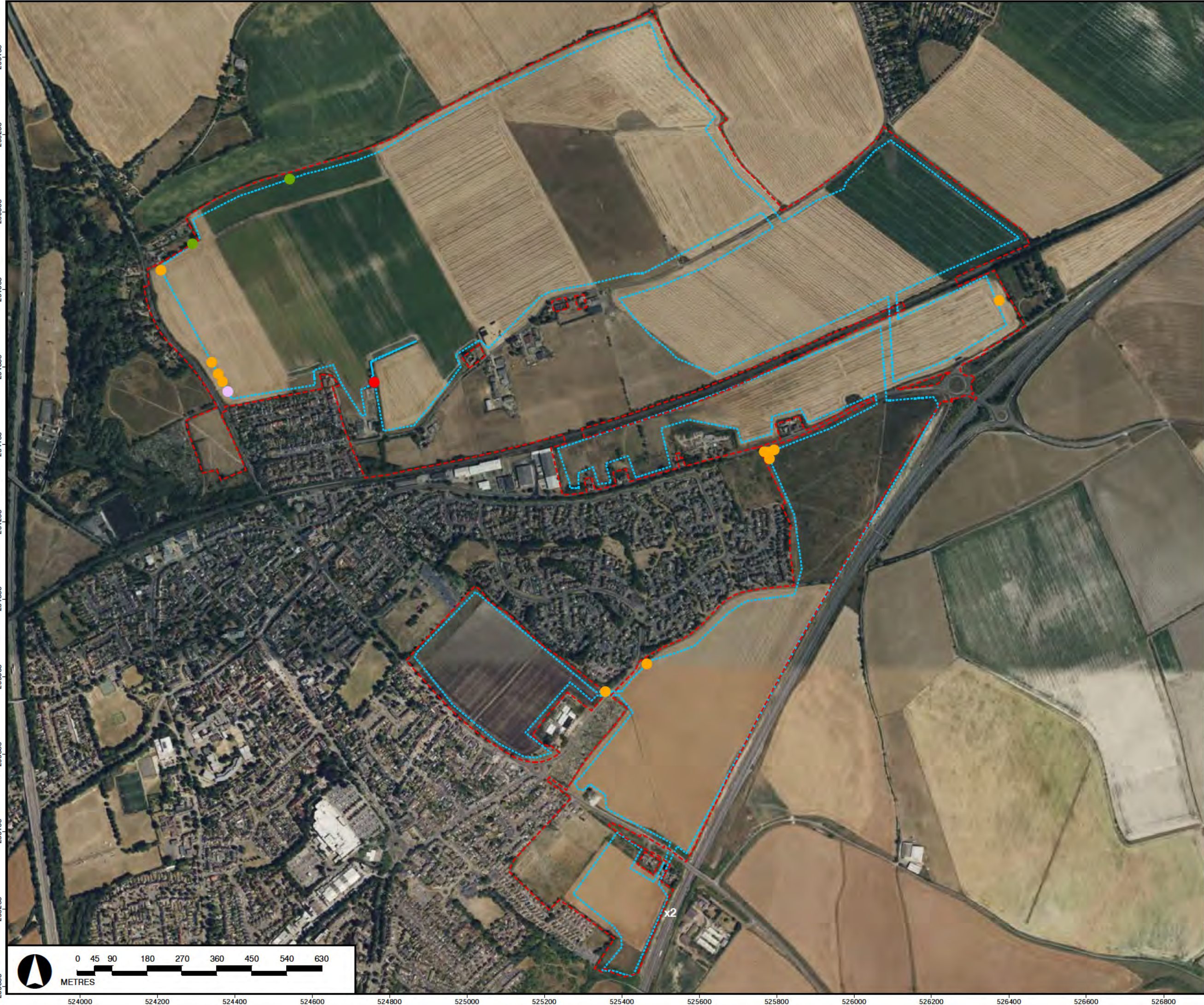
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 Application boundary

 Bat transect

 Location of static bat detector

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URBAN AND CIVIC			
Project			
BALDOCK			
Drawing Title			
BAT ACTIVITY TRANSECTS			
Drawn	Checked	Approved	Date
MP	LMB	JP	18/09/25
Job No.	Scale	Sheet Size	Revision
21.0045	1:9,000	A3	B
Drawing Number			
BMD.21.0045.DRE.904			



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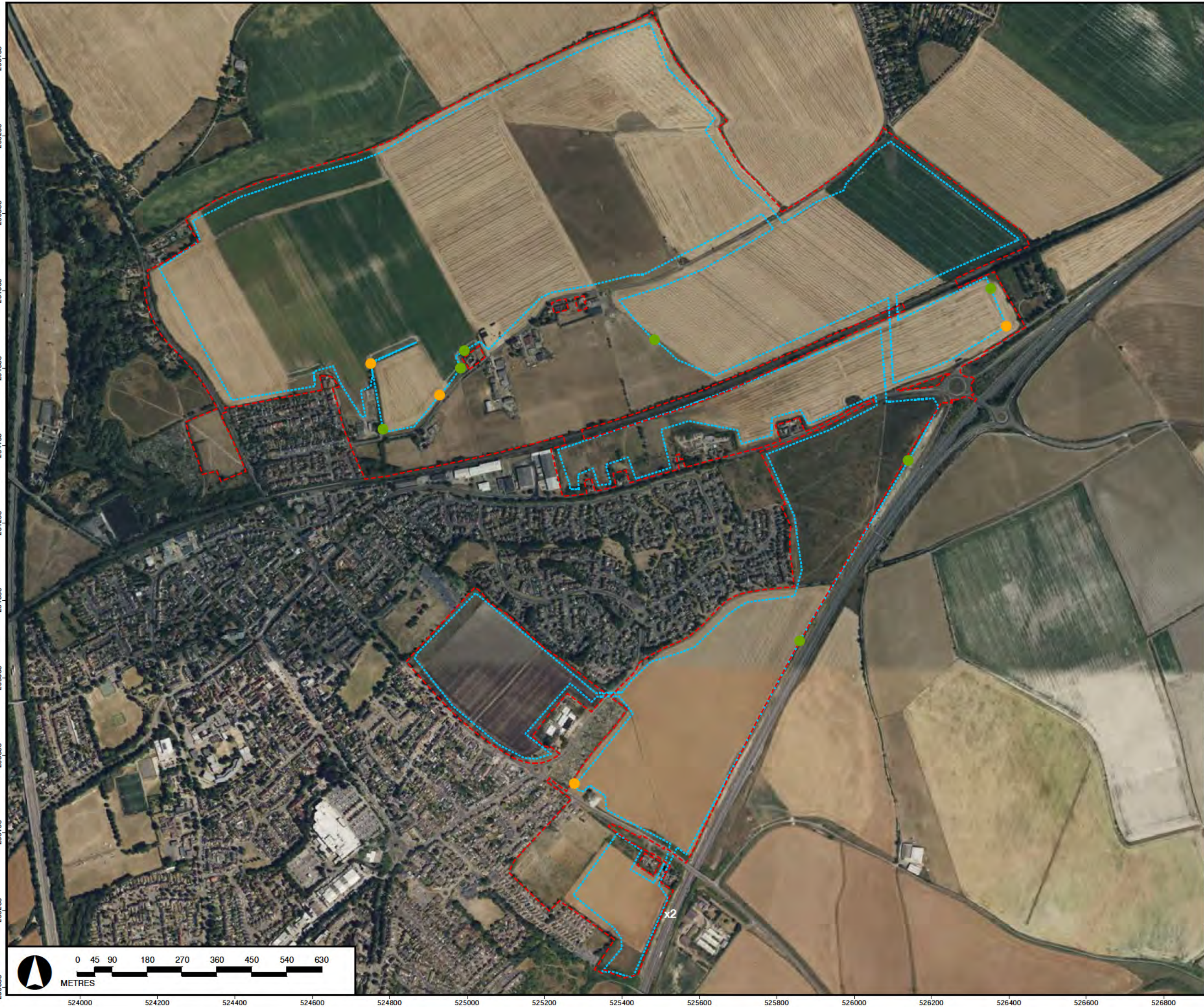
Application boundary

Bat transect

Bat transect - results

- Common pipistrelle
- Noctule
- Nyctalus spp
- Plecotus spp
- Serotine

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Rev	Description	—	
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Client			
URBAN & CIVIC			
Project			
BALDOCK			
Drawing Title			
A : BAT SURVEY RESULTS - MAY 2022			
Drawn	Checked	Approved	Date
MP	LMB	JP	18/09/25
Job No.	Scale	Sheet Size	Revision
21.0045	1:9,000	A3	B
Drawing Number			
BMD.21.0045.DRE.907A			



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- Application boundary
- Bat transect
- Bat transect - results**
- Common pipistrelle
 - Noctule
 - Nyctalus spp
 - Plecotus spp
 - Serotine

Rev	Description	
1	1	1

INFORMATION

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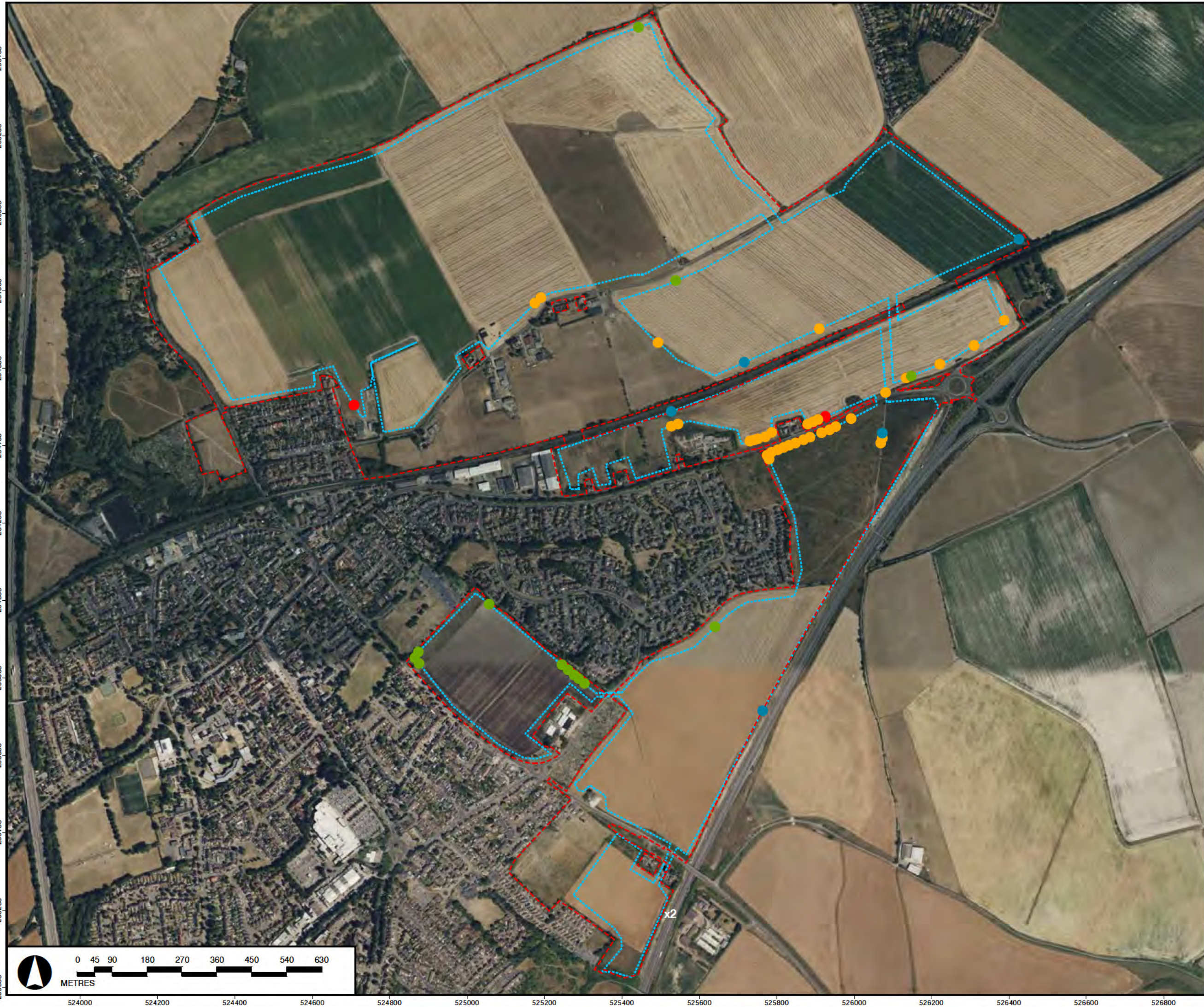
Project
BALDOCK

Drawing Title
B : BAT SURVEY RESULTS - AUGUST 2022

Drawn MP	Checked LMB	Approved JP	Date 18/09/25
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Job No. 21.0045	Scale 1:9,000	Sheet Size A3	Revision B
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BMD.21.0045.DRE.907B



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- Application boundary
- Bat transect
- Bat transect - results**
- Common pipistrelle
 - Noctule
 - Nyctalus spp
 - Plecotus spp
 - Serotine

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Rev	Description	–
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Project		
BALDOCK		
Drawing Title		
C : BAT SURVEY RESULTS - SEPTEMBER 2022		
Drawn	Checked	Approved
MP	LMB	JP
Job No.	Scale	Sheet Size
21.0045	1:9,000	A3
Drawing Number		Date
BMD.21.0045.DRE.907C		18/09/25
		Revision
		B



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- Application boundary
- Building

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Project		
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Drawing Title		
A: BUILDING PLAN - OVERVIEW		
Drawn	Checked	Approved
MP	LMB	JP
Job No.	Scale	Sheet Size
21.0045	1:9,000	A3
Drawing Number		Revision
BMD.21.0045.DRE.909A		
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Project		
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Drawing Title		
B: BUILDING PLAN - BUILDINGS 1 - 16		
Drawn	Checked	Approved
MP	LMB	JP
Job No.	Scale	Sheet Size
21.0045	1:1,200	A3
Drawing Number		
BMD.21.0045.DRE.909B		
Date		
18/09/25		
Revision		
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Client		
URBAN & CIVIC		
Project		
BALDOCK		
Drawing Title		
D: BUILDING PLAN - BUILDINGS 42 - 50		
Drawn	Checked	Approved
MP	LMB	JP
Job No.	Scale	Sheet Size
21.0045	1:1,200	A3
Drawing Number		Revision
BMD.21.0045.DRE.909D		

234400

525400

525600



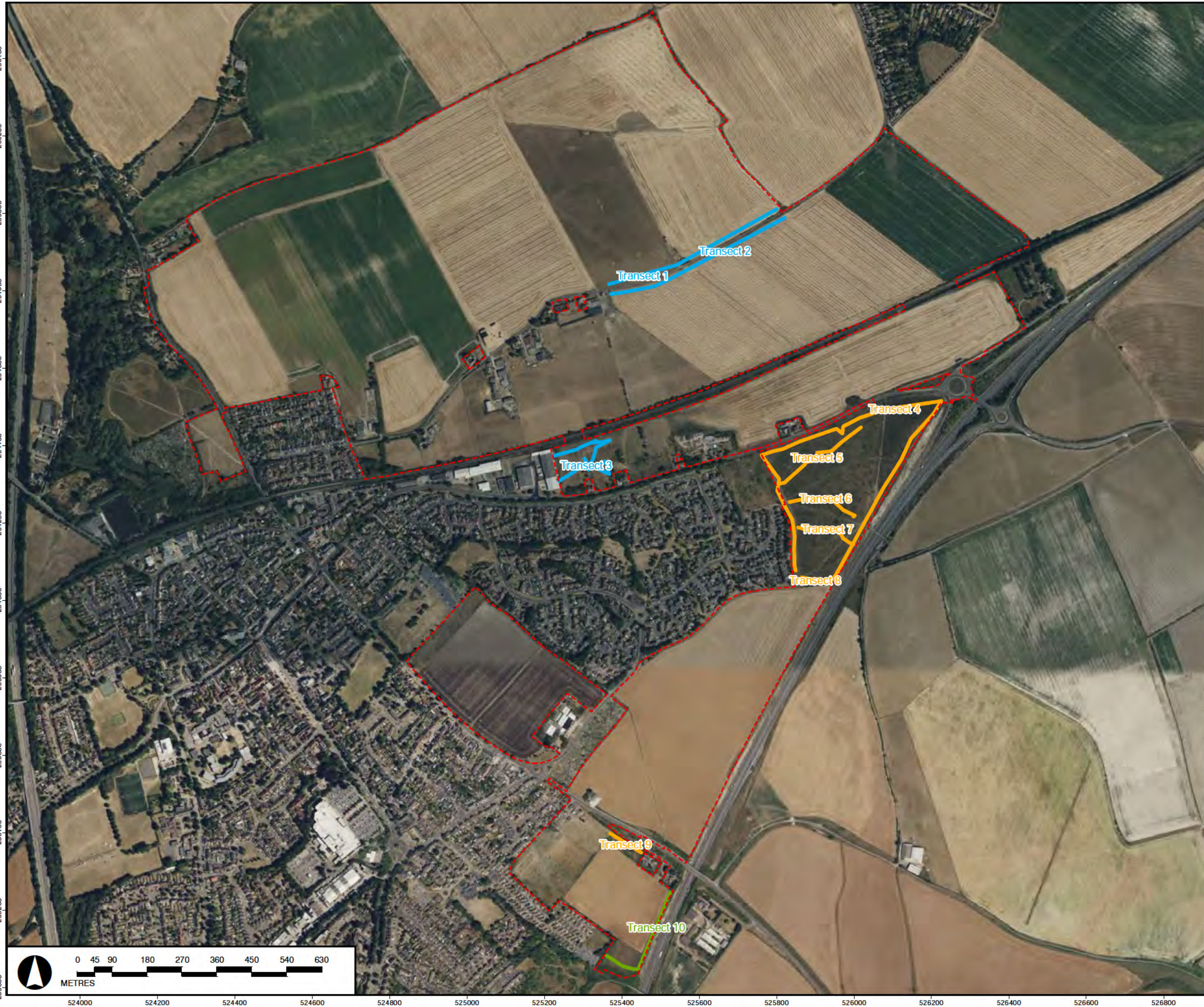
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Client		
URBAN & CIVIC		
Project		
BALDOCK		
Drawing Title		
E: BUILDING PLAN - BUILDINGS 51 - 60		
Drawn	Checked	Approved
MP	LMB	JP
Job No.	Scale	Sheet Size
21.0045	1:1,200	A3
Drawing Number		Revision
BMD.21.0045.DRE.909E		



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Application boundary

Reptile survey - results

— Common lizard and slow worm recorded

— Common lizard recorded

— No reptiles recorded

—	—	—
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Client		
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Project		
BALDOCK		
Drawing Title		
REPTILE SURVEY PLAN		
Drawn	Checked	Approved
MP	LMB	JP
Job No.	Scale	Sheet Size
21.0045	1:9,000	A3
Drawing Number		B
BMD.21.0045.DRE.905		

B. POLICY AND LEGISLATION

B.1.1 Tables B.1 and B.2 provide a summary of wildlife legislation and policy of relevance to development at the Site.

Table B.1 Overview of species/species groups relevant to the current proposals and associated legislation and policy

Species/Species group	European	UK ¹	Priority species ²
Amphibians		Various	Incl. common toad
Badger		✓	
Bats (all species)	✓	Full	Species dependent
Birds		Full	Species dependent, incl. House sparrow
Invertebrates	Various	Various	Various, incl stag beetle
Mammals (general)		Species-dependent	Incl. hedgehog, brown hare
Plants	Various	Species-dependent	Various
Reptiles (excluding sand lizard and smooth snake)		Partial – incl. killing and injury	✓
Notes ¹ Principally the Wildlife and Countryside Act: Full = full protection, either from the Wildlife and Countryside Act 1981 (as amended) alone or in combination between this act and European legislation; partial = partially protected. ✓ = covered by other specific legislation. ² Includes over 900 species listed in accordance with section 41 of the NERC Act (2006). Species known or most likely to utilise the Site are indicated where appropriate.			

Table B.2 Relevant species legislation for development at the Site

Species / group	Legislation ^{see notes}													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Amphibians											✓			
Badger	✓						✓							✓
Bats (all species)					✓		✓			✓	✓			✓
Birds (nesting)		✓	✓							✓	✓			
Brown Hare					✓		✓							
Invertebrates											✓			
Reptiles						✓					✓			
Lizard orchid								✓						
Small blue											✓			
Notes ¹ Protection of Badgers Act 1992 ² Wildlife and Countryside Act, 1981 (as amended) – Part 1 ³ Wildlife and Countryside Act, 1981 (as amended) – Schedule 1 (some species, none recorded within the Site) ⁴ Wildlife and Countryside Act, 1981 (as amended) – Schedule 5, Section 9 ⁵ Wildlife and Countryside Act, 1981 (as amended) – Schedule 5, Section 9 (4b, 4c) and (5) ⁶ Wildlife and Countryside Act, 1981 (as amended) – Schedule 5, Section 9 (1, in respect of killing and injuring) and (5) ⁷ Wildlife and Countryside Act, 1981 (as amended) – Schedule 6, Section 11 ⁸ Wildlife and Countryside Act, 1981 (as amended) – Schedule 8, Section 13 ⁹ Wildlife and Countryside Act, 1981 (as amended) – Schedule 9, Section 14 ¹⁰ Conservation of Habitats and Species Regulations 2017 – Schedule 2 (European protected species) ¹¹ Natural England and Rural Communities Act (2006) – Various species listed in accordance with Section 41 ¹² Invasive Species regulations: EU Regulation (1143/2014) on invasive alien (non-native) species ¹³ Anti-social Behaviour, Crime and Policing Act 2014 ¹⁴ Environmental Protection Act 1990 ¹⁵ Wild Mammals (Protection) Act 1996														

B.1.2 The key national planning policies and documents are:

- The Environment Act (2021);
- Schedule 7A of the Town and Country Planning Act (1990);
- The National Planning Policy Framework (2025); and
- The Natural Environment and Rural Communities (NERC) Act (2006).

C. METADATA, SURVEY CONDITIONS AND LIMITATIONS

C.1 Metadata.

Factor	Detail
Data	Bat activity surveys
Reason for collection	To provide an update to existing baseline data at the Site to inform appropriate mitigation in relation to proposed development.
Location	Baldock, Hertfordshire approximate centre: TL 25319 34539.
Date	24/05/2022, 28/07/2022 and 22/09/2022
Method of collection	See section 2.3
Who collected	Jonathan Wood MCIEEM Katie Dalton BSc (Hons) MRSB ACIEEM Heather Ridgway BSc (Hons) Hayley Farnell-Booker MCIEEM
Factor	Detail
Data	Breeding bird survey and assessment of breeding bird assemblages.
Reason for collection	To provide baseline data pertaining to breeding birds at the Site. To inform scheme design and appropriate mitigation in relation to the proposed development.
Location	Baldock, Hertfordshire approximate centre: TL 25319 34539.
Date	Breeding bird surveys 22/04/22 – 05/07/22. Winter bird survey 24 th February 2023
Method of collection	Common Bird Census adapted for Site specific conditions. Survey method broadly replicates that used in 2019 survey.
Who collected	Jeff Picksley MCIEEM, experienced ornithologist.
Factor	Detail
Data	Reptile report: Landscape review, presence/ likely absence survey.
Reason for collection	To provide an update to existing baseline data at the Site to inform appropriate mitigation in relation to proposed development.
Location	Baldock, Hertfordshire approximate centre: TL 25319 34539.
Date	19/05/2022-06/07/2022
Method of collection	Reptile: habitat assessments and presence/likely absence surveys.
Who collected	Jonathan Wood MCIEEM Katie Dalton BSc (Hons) MRSB ACIEEM Heather Ridgway BSc (Hons)

C.2 Survey Conditions

C.2.1 Bat activity survey

Date	Time	Preceding days	Cloud (%)	Temp. (°C)	Wind (Beaufort)	Precipitation
25/05/2022	20:45-22:45	Sunny spells	20-40	15	1 W	None
04/08/2022	20:30-22:30	Sunny	5	18	1 NW	None
22/09/2022	18:45-21:00	Sunny	30	17	Still	None

C.2.2 Breeding bird surveys

Date	Start Time	Weather
22/04/2022	05:55-11:30	Overcast throughout. Cloud cover 8/8. Wind NE, BF 3-4, occasional BF5 after 10:00.
17/05/2022	05:10-10:50	Bright and sunny with high cloud. Cloud cover 0/8 at start, increasing to 3/8 by end. Wind S at start BF1 increasing to SW BF 2-4 by end.
14/06/2022	04:45-11:45	Warm becoming bright and sunny as morning progressed. Cloud cover 7/8 at start decreasing to 3/8 by end. Wind S-SW, BF 1-2.
05/07/2022	04:50-11:40	Bright and sunny throughout survey. Cloud cover 2/8 to 3/8. Wind NW, increasing to BF3 during survey with occasional gusts to BF 4-5.

C.2.3 Wintering bird surveys

Date	Start Time	Preceding days	Cloud (%)	Sun	Temp. (°C)	Precipitation	Wind (Beaufort scale & direction)
24/02/2023	08:00	Fine and dry. Overnight frost. Light NE wind	60-100	Sunny spells	7	Occasional light rain or drizzle	Fine and dry. Overnight frost. Light NE wind

C.2.4 Reptile surveys

Date	Time	Preceding days	Cloud (%)	Temp. (°C)	Wind (Beaufort)	Precipitation
19/05/2022	09:00-17:00	Sunny spells	30-40	16-20	1 NW	None
27/05/2022	10:00-12:00	Sunny	30	12-15	1 WSW	None
01/06/2022	14:00-16:00	Sunny	30	13-16	2 WSW	None
09/06/2022	09:00-11:00	Sunny	10-5	14-20	2 NE	None
15/06/2022	06:45-08:00	Sunny	10-5	15-21	2 W	None
21/06/2022	09:00-10:30	Sunny	10	15-19	2 WSW	None
01/07/2022	09:00-11:30	Sunny spells	40-30	15-19	3 SSW	None
06/07/2022	09:00-12:00	Sunny spells	70-50	15-20	2 W	None

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BIRMINGHAM



CAMBRIDGE

